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```
=> s ag 0.1-7/mac
      36550 AG/MAC
      707057 0.1-7/MAC
L1      12609 AG 0.1-7/MAC
          (AG/MAC (P) 0.1-7/MAC)

=> s in 2-10/mac
      18144 IN/MAC
      518641 2-10/MAC
L2      6746 IN 2-10/MAC
          (IN/MAC (P) 2-10/MAC)

=> s sb 64-92/mac
      18184 SB/MAC
      369211 64-92/MAC
L3      2463 SB 64-92/MAC
          (SB/MAC (P) 64-92/MAC)

=> s te 5-26/mac
      10775 TE/MAC
      479334 5-26/MAC
L4      1917 TE 5-26/MAC
          (TE/MAC (P) 5-26/MAC)

=> s ge 0.3-3/mac
      14974 GE/MAC
      607629 0.3-3/MAC
L5      3824 GE 0.3-3/MAC
          (GE/MAC (P) 0.3-3/MAC)

=> s l1 and l2 and l3 and l4 and l5
L6      70 L1 AND L2 AND L3 AND L4 AND L5
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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

FULL ESTIMATED COST

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L7            51 L6

=> d all 1-51

L7    ANSWER 1 OF 51    CAPLUS    COPYRIGHT 2006 ACS on STN  
AN    2005:546192    CAPLUS  
DN    143:86769  
ED    Entered STN:    24 Jun 2005  
TI    Double sided record-once read-many optical disks  
IN    Minakami, Satoru  
PA    Ricoh Co., Ltd., Japan  
SO    Jpn. Kokai Tokkyo Koho, 11 pp.  
      CODEN: JKXXAF  
DT    Patent  
LA    Japanese  
IC    ICM G11B007-24  
      ICS B41M005-26; G11B007-007  
CC    74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
      Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005166171	A2	20050623	JP 2003-404065	20031203
PRAI	JP 2003-404065		20031203		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005166171	ICM	G11B007-24
	ICS	B41M005-26; G11B007-007
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-007 [ICS,7]
	FTERM	2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA22; 2H111/EA23; 2H111/EA25; 2H111/EA31; 2H111/FA02; 2H111/FA12; 2H111/FA14; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB17; 2H111/FB21; 2H111/FB42; 5D029/JA01; 5D029/JA04; 5D029/JB10; 5D029/JB14; 5D029/JB18; 5D029/JB42; 5D029/LA11; 5D029/RA03; 5D029/RA04; 5D029/RA17; 5D029/RA46; 5D029/RA49; 5D029/WA02; 5D090/AA01; 5D090/BB03; 5D090/BB05; 5D090/BB12; 5D090/BB13; 5D090/CC12; 5D090/CC14; 5D090/DD01; 5D090/FF02; 5D090/FF11; 5D090/GG03; 5D090/HH01; 5D090/KK09

AB    The title disk has a first substrate, which is with a guide groove and consists of: a first dye-contg. record-once read-many recording layer; a

first reflective layer; and an org. protective layer, an org. adhesive intermediate layer, and a second substrate which consists of: a third protective layer; Sb-Te based phase-change third recording layer; a second protective layer; a second reflective layer; an org. dye-contg. second recording layer; and a first protective layer, wherein the first and second recording layer is recorded/read out by irradiating a laser beam from the first substrate and wherein third recording layer is recorded/read out by irradiating a laser beam from the second substrate. The optical disk is manufd. without using a 2P process.

ST double sided record optical disk  
IT Optical disks  
(write-once read-many, double sided; double sided record-once read-many optical disks)

IT 1314-98-3, Zinc sulfide (ZnS), uses 7440-22-4, Silver, uses 7631-86-9, Silica, uses 330671-06-2, Kayarad DVD 003 \*\*\*660844-71-3\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(double sided record-once read-many optical disks)

IT 439591-91-0  
RL: TEM (Technical or engineered material use); USES (Uses)  
(double sided record-once read-many optical disks)

L7 ANSWER 2 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:428678 CAPLUS  
DN 142:472666  
ED Entered STN: 20 May 2005  
TI Rewritable optical disk showing excellent storage stability and overwrite performance

IN Yamada, Katsuyuki; Narumi, Shinya; Kibe, Takeshi; Taniguchi, Kenshi; Yuzuhara, Hajime; Deguchi, Hiroshi  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005129170	A2	20050519	JP 2003-365069	20031024
PRAI	JP 2003-365069		20031024		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005129170	ICM	G11B007-24
	ICS	G11B007-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7]
	FTERM	5D029/JA01; 5D029/JB35; 5D029/JC02; 5D029/JC17; 5D029/LB01; 5D029/LB02; 5D029/LB03; 5D029/LB07; 5D029/LB11; 5D029/MA13; 5D121/AA01; 5D121/AA04; 5D121/AA05; 5D121/EE01; 5D121/EE27; 5D121/GG26

AB The title rewritable optical disk comprises a substrate, a first protective layer having a layer thickness of 55.+-.10 nm, a first interface layer having a layer thickness of 2-7 nm, an optical recording layer contg. 69-90 at.% of Sb and having a layer thickness of 9-14 nm, a second interface layer having a layer thickness of 2-7 nm, a second protective layer, a third interface layer having a layer thickness of 2-9 nm, an optical reflective layer contg. .gtoreq.98 % of Ag, and a polymeric protective layer and/or an adhesive layer.

ST rewritable optical disk storage stability overwrite property layer thickness

IT Erasable optical disks  
(rewritable optical disk showing excellent storage stability and overwrite performance)

IT Polycarbonates, uses  
RL: DEV (Device component use); USES (Uses)  
(substrate; rewritable optical disk showing excellent storage stability and overwrite performance)

IT 409-21-2, Silicon carbide, processes 1314-23-4, Zirconia, processes 1344-28-1, Alumina, processes 13463-67-7, Titania, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (interface layer; rewritable optical disk showing excellent storage stability and overwrite performance)

IT 7440-22-4, Silver, processes  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (optical reflective layer; rewritable optical disk showing excellent storage stability and overwrite performance)

IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (protective layer; rewritable optical disk showing excellent storage stability and overwrite performance)

IT \*\*\*660844-71-3\*\*\* \*\*\*851441-80-0\*\*\* 851441-81-1  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (recording layer; rewritable optical disk showing excellent storage stability and overwrite performance)

L7 ANSWER 3 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2005:402748 CAPLUS  
 DN 142:438752  
 ED Entered STN: 12 May 2005  
 TI Phase-changeable optical recording material and is initialization method  
 IN Deguchi, Hiroshi; Yuzuhara, Hajime; Suzuki, Eiko; Miura, Hiroshi; Abe, Mikiko; Narumi, Shinya; Kibe, Takeshi; Yamada, Katsuyuki; Taniguchi, Kenshi  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-0045; G11B007-005; G11B007-0055; G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005119242	A2	20050512	JP 2003-359655	20031020
PRAI JP 2003-359655		20031020		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005119242	ICM	B41M005-26
	ICS	G11B007-0045; G11B007-005; G11B007-0055; G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-005 [ICS,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	FTERM	2H111/EA05; 2H111/EA23; 2H111/FA01; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FA25; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB17; 2H111/FB21; 5D029/HA06; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/JB45; 5D029/LA14; 5D029/LB01; 5D029/LB07; 5D029/MA14; 5D029/WA02; 5D029/WB11; 5D029/WB17; 5D029/WC01; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/CC04; 5D090/CC11; 5D090/DD01; 5D090/GG03; 5D090/GG07; 5D121/AA01; 5D121/GG26

AB The material comprises a transparent support coated with an under protective layer, a recording layer, an upper protective layer, and a reflection layer, in which the recording layer contains a phase-changeable material  $\text{AgInSb}_{\text{SbxTeyGec}}$  [a, b, x, y, c = at. ratio; a + b + x + y + c = 1; a = 0-0.015; 0.010 .ltoreq. b < 0.080; x = 0.600-0.800; y = 0.100-0.300; 0.010 .ltoreq. c < 0.080; 0.050 < a + b + c < 0.090; a/(a + b + c) .ltoreq. 0.10]. The material is initialized at linear velocity from (V - 2) to (V + 1.0) m/s (V = recrystn. limiting velocity). The material shows good reliability on storage, recordable by CAV method, and overwriting jitter increasing is prevented.

ST phase changeable optical recording material; silver indium antimony tellurium germanium optical recording

IT Alkaline earth oxides  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (dielec. layer contg.; phase-changeable optical recording material  
 without jitter increasing on overwriting)

IT Erasable optical disks  
 (phase-changeable optical recording material without jitter increasing  
 on overwriting)

IT 173615-45-7, Titanium yttrium zirconium oxide (Ti0.4Y0.04Zr0.58O2.02)  
 227175-62-4, Titanium yttrium zirconium oxide (Ti0.1Y0.05Zr0.87O2.03)  
 249759-85-1, Titanium yttrium zirconium oxide (Ti0.2Y0.05Zr0.78O2.02)  
 850799-07-4, Titanium yttrium zirconium oxide (Ti0.5Y0.03Zr0.48O2.02)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (dielec. layer; phase-changeable optical recording material without  
 jitter increasing on overwriting)

IT 384829-18-9 \*\*\*660844-71-3\*\*\* 850799-00-7 \*\*\*850799-01-8\*\*\*  
 850799-02-9 \*\*\*850799-03-0\*\*\* \*\*\*850799-04-1\*\*\*  
 \*\*\*850799-05-2\*\*\* \*\*\*850799-06-3\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (phase-changeable optical recording material without jitter increasing  
 on overwriting)

L7 ANSWER 4 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1058753 CAPLUS

DN 142:45980

ED Entered STN: 10 Dec 2004

TI Optical recording tape for reliable high density recording

IN Shinokawa, Taiji; Morita, Takeshi

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004348912	A2	20041209	JP 2003-147296	20030526
PRAI	JP 2003-147296		20030526		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004348912	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	FTERM	5D029/HA07; 5D029/TB03

AB The title optical recording tape comprises a recording layer and a  
 protective layer on one side of a polymer support and a back coat layer on  
 the other side of the polymer support, wherein the recording layer  
 together with the protective layer shows a Young's modulus of 15-65 GPa in  
 a length direction.

ST optical recording tape elastic modulus protective layer back coat

IT Optical recording materials

(optical recording tape for reliable high d. recording)

IT Polyesters, uses

RL: DEV (Device component use); USES (Uses)

(optical recording tape for reliable high d. recording)

IT 7440-22-4, Silver, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); PROC (Process); USES (Uses)

(protective layer; optical recording tape for reliable high d.  
 recording)

IT 805246-88-2 805246-89-3 805246-90-6 805246-91-7 \*\*\*805246-92-8\*\*\*  
 805246-93-9 805246-94-0

RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); PROC (Process); USES (Uses)

(recording layer; optical recording tape for reliable high d.  
 recording)

IT 25038-59-9, uses

RL: DEV (Device component use); USES (Uses)

(support; optical recording tape for reliable high d. recording)

L7 ANSWER 5 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:841938 CAPLUS  
 DN 141:340493  
 ED Entered STN: 15 Oct 2004  
 TI Phase changeable optical recording material having initialized phase of controlled orientation  
 IN Abe, Mikiko; Yuzuhara, Hajime; Deguchi, Hiroshi; Suzuki, Eiko; Miura, Hiroshi  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004284024	A2	20041014	JP 2003-75317	20030319
PRAI	JP 2003-75317		20030319		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004284024	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	FTERM	2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA41; 2H111/FA12; 2H111/FA14; 2H111/FA24; 2H111/FB05; 2H111/FB06; 2H111/FB07; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB18; 2H111/FB19; 2H111/FB20; 2H111/FB21; 2H111/FB30; 5D029/HA06; 5D029/JA01; 5D029/JB35; 5D029/JC18; 5D029/LA14; 5D029/LB01; 5D029/LB07; 5D029/LB11; 5D121/AA01; 5D121/GG26

AB In the material comprising a support with tracks successively coated with 1st protective layer, a recording layer which changes between crystal and amorphous phases, 2nd protective layer, and a reflective layer, the crystal phase of the initialized recording layer with face interval 2.9-3.3 .ANG. and vertical to the support is oriented to have an angle of 30.+-.15.degree. to tangential line of the track. The material shows good recording and reading properties by laser beam.

ST phase change optical recording material crystal phase orientation;  
 IT germanium antimony tellurium laser sensitive optical recording material  
 IT Optical recording materials

IT (erasable; phase changeable optical recording material having initialized phase of controlled orientation)

IT 7429-91-6, Dysprosium, uses 7439-92-1, Lead, uses 7439-96-5, Manganese, uses 7439-97-6, Mercury, uses 7440-22-4, Silver, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-55-3, Gallium, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

IT (antimony-gallium-tellurium layer contg.; phase changeable optical recording material having initialized phase of controlled orientation)

IT 1314-36-9, Yttria, uses  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

IT (metal oxide layer between recording layer and protective layer; phase changeable optical recording material having initialized phase of controlled orientation)

IT 1312-43-2, Indium oxide 1314-13-2, Zinca, uses 1314-23-4, Zirconia, uses 1317-36-8, Lead oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses 21651-19-4, Tin oxide (SnO)  
 RL: TEM (Technical or engineered material use); USES (Uses)

IT (metal oxide layer between recording layer and protective layer; phase changeable optical recording material having initialized phase of controlled orientation)

IT 773104-42-0 \*\*\*773104-43-1\*\*\* \*\*\*773104-44-2\*\*\* 773104-45-3

RL: TEM (Technical or engineered material use); USES (Uses)  
(phase changeable optical recording material having initialized phase  
of controlled orientation)

L7 ANSWER 6 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:759253 CAPLUS  
DN 141:285884  
ED Entered STN: 17 Sep 2004  
TI Multilayer phase change type information recording medium showing  
excellent recording properties and its recording and readout method  
IN Iwasa, Hiroyuki; Shinotsuka, Michiaki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004259382	A2	20040916	JP 2003-49984	20030226
PRAI	JP 2003-49984		20030226		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004259382	ICM	G11B007-24
	ICS	B41M005-26
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]
	FTERM	2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA32; 2H111/EA37; 2H111/EA40; 2H111/FA02; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA24; 2H111/FA25; 2H111/FA26; 2H111/FA27; 2H111/FA28; 2H111/FB04; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB15; 2H111/FB16; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB23; 2H111/FB28; 2H111/FB29; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/JB47; 5D029/JC04; 5D029/KB14; 5D029/LB11; 5D029/LC04; 5D029/MA27

AB The title information recording medium includes one optical reflection  
layer (3-20 nm thick) comprising Ag and 0.1-10 % of oxide selected from  
In2O3, SnO2, ZnO, CdO, TiO2, CdIn2O4, Cd2SnO2, and Zn2SnO4. The recording  
layer comprises Sb-Te.

ST multilayer phase change optical recording disk reflection layer oxide  
IT Erasable optical disks

(multilayer phase change type information recording medium and its  
recording and readout method)

IT 24304-00-5, Aluminum nitride

RL: DEV (Device component use); USES (Uses)

(diffusion layer; multilayer phase change type information recording  
medium and its recording and readout method)

IT 1306-19-0, Cadmium oxide, uses 1312-43-2, Indium oxide 1314-13-2, Zinc  
oxide, uses 7440-22-4, Silver, uses 12014-04-9, Cadmium indium oxide  
(CdIn2O4) 12143-46-3, Tin zinc oxide (SnZn2O4) 13463-67-7, Titania,  
uses 18282-10-5, Tin oxide (SnO2) 50926-11-9, ITO 128689-94-1,  
Cadmium tin oxide (Cd2SnO2)

RL: DEV (Device component use); USES (Uses)

(optical reflection layer; multilayer phase change type information  
recording medium and its recording and readout method)

IT \*\*\*714276-02-5\*\*\* 717887-71-3

RL: DEV (Device component use); USES (Uses)

(recording layer; multilayer phase change type information recording  
medium and its recording and readout method)

L7 ANSWER 7 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:550510 CAPLUS

DN 141:114135

ED Entered STN: 09 Jul 2004

TI Phase change information recording medium having multiple layers and  
recording and playback method for the medium



IN Iwasa, Hiroyuki; Shinotsuka, Michiaki; Shinkai, Masaru  
PA Ricoh Company, Ltd., Japan  
SO U.S. Pat. Appl. Publ., 20 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM G11B007-24  
INCL 369094000; 430270130; 369288000  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004130998	A1	20040708	US 2003-738012	20031216
	JP 2005004943	A2	20050106	JP 2003-425588	20031222
PRAI	JP 2002-370834	A	20021220		
	JP 2003-142669	A	20030520		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004130998	ICM	G11B007-24
	INCL	369094000; 430270130; 369288000
	IPCI	G11B0007-24 [ICM,7]
	NCL	369/094.000
	ECLA	G11B007/24S4
JP 2005004943	IPCI	G11B0007-24 [ICM,7]; G11B0007-0045 [ICS,7]
	FTERM	5D029/JA01; 5D029/JB03; 5D029/JB05; 5D029/JB35; 5D029/JC04; 5D029/KB14; 5D029/LA14; 5D029/LB07; 5D029/LB11; 5D029/LC16; 5D029/MA13; 5D029/MA14; 5D029/MA27; 5D090/AA01; 5D090/BB05; 5D090/BB12; 5D090/DD01; 5D090/EE01; 5D090/EE05; 5D090/KK06
AB	A multilayer phase change information recording medium including plural information layers contg. at least a first information layer and a last information layer, each of which includes a recording layer in which information is recorded utilizing a phase change between a cryst. phase and an amorphous phase. At least one of the plural information layers other than the last information layer includes a first lower protective layer, a first recording layer located overlying the lower protective layer, a first upper protective layer located overlying the first recording layer, a first reflective layer located overlying the first upper protective layer, and a heat diffusion layer located overlying the first reflective layer and which mainly contains In, Zn and O.	
ST	phase change information recording medium disk multiple layer playback	
IT	Optical disks (phase change information recording medium having multiple layers)	
IT	7440-66-6, Zinc, uses 7440-74-6, Indium, uses RL: DEV (Device component use); USES (Uses) (phase change information recording medium having multiple layers contg.)	
IT	1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses RL: DEV (Device component use); USES (Uses) (protective layer; phase change information recording medium having multiple layers contg.)	
IT	***714276-02-5*** 717887-71-3 RL: DEV (Device component use); USES (Uses) (recording layer; phase change information recording medium having multiple layers contg.)	
IT	106921-99-7, Aluminum 98, titanium 2 (atomic) 348115-91-3, Copper 1, Palladium 1, Silver 98 (atomic) 717887-72-4 RL: DEV (Device component use); USES (Uses) (reflective layer; phase change information recording medium having multiple layers contg.)	

L7 ANSWER 8 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:533214 CAPLUS

DN 141:96756

ED Entered STN: 02 Jul 2004

TI Multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manufacture

IN Iwasa, Hiroyuki; Shinotsuka, Michiaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26; G11B007-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004185744	A2	20040702	JP 2002-352940	20021204
PRAI	JP 2002-352940		20021204		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004185744	ICM	G11B007-24
	ICS	B41M005-26; G11B007-26
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-26 [ICS,7]
	FTERM	2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA37; 2H111/EA41; 2H111/FA02; 2H111/FA12; 2H111/FA14; 2H111/FA18; 2H111/FA25; 2H111/FA26; 2H111/FA27; 2H111/FA28; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB12; 2H111/FB15; 2H111/FB16; 2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB22; 2H111/FB23; 2H111/FB27; 2H111/GA00; 5D029/JA01; 5D029/JB13; 5D029/JB18; 5D029/JB35; 5D029/KB14; 5D029/LA12; 5D029/LA14; 5D029/LA16; 5D029/LA17; 5D029/LB07; 5D029/LC06; 5D029/MA13; 5D029/MA14; 5D029/MA27; 5D029/RA03; 5D029/RA04; 5D121/AA07; 5D121/EE01; 5D121/EE28; 5D121/FF00; 5D121/GG26

AB In the title optical disk, a protective coating layer and a heat-diffusion layer satisfy specified relations between their layer thicknesses and refractive indexes. The heat-diffusion layer may be made up of ITO and the protective coating layer may be made up of ZnS and SiO<sub>2</sub>, and the recording layer may be made up of Sb and Te.

ST optical disk multilayer phase change cooling efficiency manuf

IT Optical disks

(multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

IT 50926-11-9, ITO

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(heat-diffusion layer; multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(protective coating layer; multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

IT \*\*\*714276-02-5\*\*\*

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(recording layer; multilayer phase change type optical information recording disk showing improved cooling efficiency to have improved reliability and its manuf.)

L7 ANSWER 9 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:330949 CAPLUS

DN 140:347629

ED Entered STN: 23 Apr 2004

TI Initialization of phase change optical disk made from antimony and tellurium form improved recording characteristics

IN Deguchi, Hiroshi; Suzuki, Eiko; Yuzuhara, Hajime; Miura, Hiroshi; Abe, Mikiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G11B007-26  
ICS B41M005-26; G11B007-0055; G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 75  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004127485	A2	20040422	JP 2003-203213	20030729
PRAI	JP 2002-222470	A	20020731		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004127485	ICM	G11B007-26
	ICS	B41M005-26; G11B007-0055; G11B007-24
	IPCI	G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7]
	FTERM	2H111/EA04; 2H111/EA05; 2H111/EA23; 2H111/EA31; 2H111/FA01; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FB05; 2H111/FB09; 2H111/FB12; 5D029/JA01; 5D029/JB18; 5D029/JB35; 5D029/LB07; 5D029/MA14; 5D090/AA01; 5D090/BB05; 5D090/CC11; 5D090/DD01; 5D121/AA01; 5D121/GG26

AB The process is carried out under the crystn. condition in which the recording layer contg. Sb and Te gives P1/P2.gtoreq.10 in the x-ray diffraction pattern, wherein P1 is the peak intensity at 2.theta. = 27-31.degree. and P2 is the peak intensity at 2.theta. = 39-44.degree..  
The recording layer further contains Ge.

ST initialization crystn phase change optical disk

IT Crystallization

Optical disks

(initialization of phase change optical disk made from antimony and tellurium)

IT	667416-58-2	667416-59-3	667416-60-6	667416-61-7	667416-63-9
	667416-64-0	667416-65-1	667416-66-2	***667416-67-3***	
	681161-41-1				

RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(initialization of phase change optical disk made from antimony and tellurium)

L7 ANSWER 10 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:180515 CAPLUS

DN 140:243650

ED Entered STN: 05 Mar 2004

TI Phase change type optical disk and its initialization

IN Deguchi, Hiroshi; Suzuki, Eiko; Yuzuhara, Hajime; Miura, Hiroshi; Abe, Mikiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26

ICS G11B007-0055; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004071025	A2	20040304	JP 2002-227247	20020805
PRAI	JP 2002-227247		20020805		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004071025	ICM	G11B007-26
	ICS	G11B007-0055; G11B007-24
	IPCI	G11B0007-26 [ICM,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7]
	FTERM	5D029/HA06; 5D029/JA01; 5D029/JB18; 5D029/JB35;

5D029/LB07; 5D029/MA14; 5D090/AA01; 5D090/BB05;  
5D090/CC11; 5D090/DD01; 5D121/AA01; 5D121/GG26

AB The invention relates to an optical disk having a phase change type recording layer made mainly up of Sb and Te, wherein the initialized recording layer satisfies a  $P1/P2 \geq 5.0$  [ $P1$  = x-ray diffraction peak intensity at 27-31.degree.;  $P2$  = x-ray diffraction peak intensity at 39-44.degree.]. The optical disk initialization is carried out by a specified laser scanning rate.

ST optical disk phase change type initialization antimony tellurium  
IT Optical disks  
(phase change type optical disk and its initialization)

IT 667416-58-2 667416-59-3 667416-60-6 667416-61-7 667416-62-8  
667416-63-9 667416-64-0 667416-65-1 667416-66-2 \*\*\*667416-67-3\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(recording layer of phase change type optical disk for new initialization method)

L7 ANSWER 11 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:139791 CAPLUS  
DN 140:207531  
ED Entered STN: 20 Feb 2004  
TI Rewritable phase-change optical recording medium such as optical disk  
IN Suzuki, Eiko; Yuzuhara, Hajime; Deguchi, Hiroshi; Miura, Hiroshi; Abe, Mikiko; Tashiro, Hiroko; Yamada, Katsuyuki; Narumi, Shinya; Kibe, Takeshi; Taniguchi, Kenshi  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004055113	A2	20040219	JP 2003-10938	20030120
PRAI	JP 2002-154429	A	20020528		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004055113	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	FTERM	5D029/JA01; 5D029/JB35; 5D029/LA14; 5D029/LA15; 5D029/LB07; 5D029/MA14; 5D029/MA17; 5D029/NA13; 5D029/NA23

AB The title medium has a phase-change recording layer contg. material reversibly changing the phase between amorphous and crystal phase on a substrate, wherein the crystal phase after the initial crystn. and before recording has 20-50.degree. tilted angle against the grain boundary towards recording tracks. The medium shows good rewriting characteristics under high linear recording for many times.

ST rewritable phase optical recording disk grain boundary  
IT Erasable optical disks  
(phase-change; rewritable phase-change optical recording medium)

IT Optical recording materials  
(rewritable phase-change optical recording medium)

IT 660844-67-7 660844-68-8 660844-69-9 660844-70-2 \*\*\*660844-71-3\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(recording layer of rewritable phase-change optical recording medium)

L7 ANSWER 12 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:118546 CAPLUS  
DN 140:190044  
ED Entered STN: 13 Feb 2004  
TI Phase-change optical recording media such as optical disk and method for recording thereon  
IN Yuzuhara, Hajime; Abe, Mikiko; Deguchi, Hiroshi; Miura, Hiroshi; Suzuki, Eiko  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26; G11B007-0045; G11B007-125  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004046956	A2	20040212	JP 2002-201667	20020710
PRAI	JP 2002-201667		20020710		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004046956	ICM	G11B007-24
	ICS	B41M005-26; G11B007-0045; G11B007-125
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-125 [ICS,7]
	FTERM	2H111/EA04; 2H111/EA23; 2H111/EA31; 2H111/EA36; 2H111/FA01; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FA23; 2H111/FA24; 2H111/FA25; 2H111/FA27; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB21; 2H111/FB30; 5D029/JA01; 5D029/JB18; 5D029/JC20; 5D029/LA14; 5D029/LA15; 5D029/LB01; 5D029/LB04; 5D029/MA13; 5D029/NA13; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/DD01; 5D090/EE01; 5D090/HH01; 5D090/KK03; 5D090/KK05; 5D119/AA21; 5D119/AA24; 5D119/BA01; 5D119/BB04; 5D119/DA01; 5D119/DA02; 5D119/DA07; 5D119/EC09; 5D119/HA45; 5D119/HA52; 5D789/AA21; 5D789/AA24; 5D789/BA01; 5D789/BB04; 5D789/DA01; 5D789/DA02; 5D789/DA07; 5D789/EC09; 5D789/HA45; 5D789/HA52

AB The title medium has a first dielec. protective layer, a phase-change recording layer, a second dielec. protective layer, and a reflective layer on a substrate, wherein the upper linear velocity(Vcu) of recrystn. of the recording layer is between max. recording linear velocity and min. recording linear velocity and satisfies equation:  
 $(V_{max} + V_{min}) / 2 < V_{cu} < \{ (V_{max} + V_{min}) / 2 \} + 3$ . The medium is for high linear speed recording and also is suitable for low speed recording.

ST optical recording media phase change

IT Erasable optical disks

(phase-change; optical recording media and method for recording using the same)

IT \*\*\*657403-84-4\*\*\* 657403-85-5 \*\*\*657403-86-6\*\*\*  
\*\*\*657403-87-7\*\*\* 657403-88-8 \*\*\*657403-89-9\*\*\* 657403-90-2  
657403-91-3 657403-92-4 657403-93-5 657403-94-6 657403-95-7

RL: DEV (Device component use); USES (Uses)

(phase-change recording layer of optical recording media)

L7 ANSWER 13 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:930030 CAPLUS

DN 139:401609

ED Entered STN: 28 Nov 2003

TI Phase-change optical disks with high-speed recording property and corrosion resistance and their manufacture

IN Mizutani, Miki; Ito, Kazunori; Harigai, Masato; Deguchi, Hiroshi; Tashiro, Hiroko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS B41M005-26; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003338085	A2	20031128	JP 2002-150715	20020524

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003338085	ICM	G11B007-24
	ICS	B41M005-26; G11B007-26
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-26 [ICS,7]

AB The disks have heat-dissipating reflective layers made of Ag (alloy) with av. in-plane crystal size .ltoreq.0.15 .mu.m formed on recording layers (e.g., Ag<sub>0.5</sub>In<sub>5.0</sub>Sb<sub>68.5</sub>Te<sub>24.0</sub>Ge<sub>2.0</sub>). The reflective layers maybe semitransparent and be included in laminated optical disks. The reflective layers are formed by sputtering in prescribed conditions.

ST phase change disk silver alloy reflective layer; optical disk silver alloy heat dissipating reflective; DVD sputtering silver alloy corrosion resistance; silver indium antimony tellurium germanium DVD reflective

IT Erasable optical disks  
(phase-change; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT Sputtering  
(sputter deposition; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT Silver alloy, base  
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(heat-dissipating reflective layer; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT 7440-22-4, Silver, processes  
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(heat-dissipating reflective layer; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT \*\*\*384829-20-3\*\*\* 627098-14-0 627098-15-1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layer; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

IT 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(sputtering gas; manuf. of storage-stable phase-change DVD having Ag (alloy) heat-dissipating reflective layers by sputtering)

L7 ANSWER 14 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:921405 CAPLUS

DN 139:401603

ED Entered STN: 25 Nov 2003

TI Optical recording material containing antimony tellurium germanium indium silver

IN Tabata, Hiroshi; Kobayashi, Satoru; Kubo, Naoyuki; Yoshikawa, Masashi

PA Victor Co. of Japan, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26  
ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003335063	A2	20031125	JP 2002-145777	20020521
PRAI JP 2002-145777		20020521		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003335063	ICM	B41M005-26
	ICS	G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]

AB The material comprises a support successively coated with 1st protective layer, a recording layer (SbxTey)aGebIncAgd ( 2.5.ltoreq. x/y .ltoreq.3.5; 0.85.ltoreq. a .ltoreq.0.95; 0.03.ltoreq. b .ltoreq.0.1; 0.005.ltoreq. c .ltoreq.0.05; 0.001 .ltoreq. d .ltoreq.0.03; a + b + c + d = 1), 2nd protective layer, and a reflection layer. The material shows low influence of recording strategy in wide liner velocity range and good recording properties.

ST optical recording material antimony tellurium germanium indium silver

IT Optical recording materials  
(optical recording material with low recording strategy influence)

IT 627076-88-4 627076-89-5 627076-90-8 627076-91-9 \*\*\*627076-92-0\*\*\*  
627076-93-1 627076-94-2 627076-95-3 627076-96-4  
RL: DEV (Device component use); USES (Uses)  
(optical recording material with low recording strategy influence)

IT 58739-36-9 627076-97-5  
RL: DEV (Device component use); USES (Uses)  
(reflection layer; optical recording material with low recording strategy influence)

L7 ANSWER 15 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:815622 CAPLUS

DN 139:315495

ED Entered STN: 17 Oct 2003

TI Current-induced phase-convertible alloys for semiconductor memory devices

IN Ito, Kazunori

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01L027-10  
ICS H01L045-00

CC 76-3 (Electric Phenomena)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003298013	A2	20031017	JP 2002-98460	20020401
PRAI	JP 2002-98460		20020401		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003298013	ICM	H01L027-10
	ICS	H01L045-00
	IPCI	H01L0027-10 [ICM,7]; H01L0045-00 [ICS,7]

AB The title materials become a high-resistance amorphous phase by impression of pulsed current and become a low-resistance crystal phase by decreasing current slowly. Such materials are SbTe contg. .ltoreq.15 at.% additive metals contg. In, Ag, and Ge. A FET in the semiconductor memory devices comprise a source, a gate, and a drain which are connected to a word line, a bit line, and a ground line through a phase-convertible material, resp. The materials are useful in fine and precision integration in semiconductor memory devices.

ST antimony telluride phase convertible alloy current resistance semiconductor memory

IT Electric resistance  
(change by phase transition; current-impression phase-convertible materials for semiconductor memory devices)

IT Field effect transistors  
Semiconductor memory devices  
(current-impression phase-convertible materials for semiconductor memory devices)

IT Phase transition  
(current-induced; current-impression phase-convertible materials for semiconductor memory devices)

IT Electric cables  
(ground, current-induced phase-convertible alloys for; current-impression phase-convertible materials for semiconductor memory devices)

IT Electric current  
(pulsing/decreasing; current-impression phase-convertible materials for semiconductor memory devices)

IT 12067-31-1, Antimony telluride (SbTe)  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(In and Ag and Ge-contg., for phase-convertible alloy;  
current-impression phase-convertible materials for semiconductor memory  
devices)  
IT \*\*\*524009-12-9\*\*\* , Antimony 60-70, germanium 1-7, indium 1-10, silver  
0-1, tellurium 20-30 (atomic)  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP  
(Physical process); PROC (Process)  
(phase transition alloy; current-impression phase-convertible materials  
for semiconductor memory devices)

L7 ANSWER 16 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:815366 CAPLUS  
DN 139:314568  
ED Entered STN: 17 Oct 2003  
TI Phase change optical disks and method and apparatus for information  
recording  
IN Ito, Kazunori; Harigai, Masato; Tashiro, Hiroko; Mizutani, Miki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26; G11B007-004; G11B007-0045; G11B007-125  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003296966	A2	20031017	JP 2002-98596	20020401
PRAI	JP 2002-98596		20020401		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003296966	ICM	G11B007-24
	ICS	B41M005-26; G11B007-004; G11B007-0045; G11B007-125
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-004 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-125 [ICS,7]

AB The recording layers of the disks comprise .gtoreq.2 phase-changing  
layers, having different chem. compns. for neighboring layers.  
Preferably, the phase-changing layers may be sepd. with interlayers.  
Recording of information in the disks is carried out with optical beams  
having irradsn. powers of Pw, Pe, and Pb, where Pw >Pe >Pb, with  
simultaneous modulation of Pw and Pe. App. for carrying out the process  
is also claimed. The disks have high recording d.

ST phase change optical disk high density recording; multi phase change layer  
optical disks

IT Optical recording  
(including superimposed modulated signals; high-d. optical disks with  
multilayered phase change layers and method and app. for their  
information recording)

IT Optical disks  
(phase change; high-d. optical disks with multilayered phase change  
layers and method and app. for their information recording)

IT 7429-91-6, Dysprosium, uses 7439-95-4, Magnesium, uses 7439-96-5,  
Manganese, uses 7440-21-3, Silicon, uses 7440-55-3, Gallium, uses  
7440-70-2, Calcium, uses  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
use); USES (Uses)

(alloying element in Sb-Te alloy phase change layers; high-d. optical  
disks with multilayered phase change layers and method and app. for  
their information recording)

IT \*\*\*406496-61-5\*\*\* 612508-87-9 612508-96-0  
RL: TEM (Technical or engineered material use); USES (Uses)  
(high-d. optical disks with multilayered phase change layers and method  
and app. for their information recording)

IT 409-21-2, Silicon carbide (SiC), uses 12033-89-5, Silicon nitride, uses  
24304-00-5, Aluminum nitride (AlN) 50926-11-9, ITO  
RL: TEM (Technical or engineered material use); USES (Uses)  
(interlayer; high-d. optical disks with multilayered phase change



L7 ANSWER 17 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:717286 CAPLUS  
 DN 139:205101  
 ED Entered STN: 12 Sep 2003  
 TI Optical recording medium and method for manufacturing the optical recording medium  
 IN Yamada, Katsuyuki; Nakamura, Yuki; Narumi, Shinya; Kato, Masaki  
 PA Ricoh Company, Japan  
 SO Eur. Pat. Appl., 31 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1343155	A2	20030910	EP 2003-5056	20030306
	EP 1343155	A3	20040310		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2003272232	A2	20030926	JP 2002-75052	20020318
	JP 2003331470	A2	20031121	JP 2002-89736	20020327
	CN 1444215	A	20030924	CN 2003-119905	20030303
	US 2003214902	A1	20031120	US 2003-384452	20030307
PRAI	JP 2002-62608	A	20020307		
	JP 2002-75052	A	20020318		
	JP 2002-89736	A	20020327		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1343155	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	ECLA	G11B007/257
JP 2003272232	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]
JP 2003331470	IPCI	G11B0007-24 [ICM,7]; C23C0014-34 [ICS,7]; G11B0007-26 [ICS,7]
CN 1444215	IPCI	G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7]
US 2003214902	IPCI	G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7]; B32B0003-02 [ICS,7]; C23C0014-34 [ICS,7]; C23C0014-08 [ICS,7]
	IPCR	G11B0007-24 [I,C]; G11B0007-257 [I,A]
	NCL	369/275.500
	ECLA	G11B007/257

AB An optical recording medium includes a substrate having guide groove thereon; a first protective layer located overlying the substrate; a recording layer located overlying the first protective layer; a second protective layer located overlying the recording layer; a third protective layer of 2-9 nm thick located overlying the second protective layer and comprising Si in an amt. not less than 35 at. percent; and a reflection layer including Ag in an amt. not less than 95 %. An overcoat layer having a glass transition temp. of from 90-180 .degree.C is preferably formed overlying the reflection layer. A method for manufg. the optical recording medium is also provided.

ST optical recording medium manufg

IT Optical disks

Optical recording materials

(optical recording medium and method for manufg. optical recording medium)

IT \*\*\*384829-20-3\*\*\* 586416-03-7

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(optical recording medium and method for manufg. optical recording medium contg.)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)

(protective layer; optical recording medium and method for manufg. optical recording medium contg.)

IT 409-21-2, Silicon carbide, properties

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(protective layer; optical recording medium and method for manufg.

optical recording medium contg.)  
 IT 586415-99-8  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (recording layer; optical recording medium and method for manufg.  
 optical recording medium contg.)  
 IT 7440-22-4, Silver, properties 586416-05-9  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (reflection layer; optical recording medium and method for manufg.  
 optical recording medium contg.)

L7 ANSWER 18 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:373952 CAPLUS  
 DN 138:376500  
 ED Entered STN: 16 May 2003  
 TI Phase-change optical recording medium and apparatus for recording  
 information in it  
 IN Ito, Kazunori; Yuzuhara, Hajime; Yamada, Katsuyuki; Narumi, Shinya; Onagi,  
 Nobuaki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-0045  
 ICS G11B007-006; G11B007-125; G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003141730	A2	20030516	JP 2001-336672	20011101
PRAI JP 2001-336672		20011101		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003141730	ICM	G11B007-0045
	ICS	G11B007-006; G11B007-125; G11B007-24
	IPCI	G11B0007-0045 [ICM,7]; G11B0007-006 [ICS,7]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7]

  
 AB The recording medium has a recording layer which reversibly transforms  
 between a crystal phase and an amorphous phase by irradiation of multipulse  
 laser beam. The laser beam comprises combinations of plural kinds of  
 heating pulses at laser power Pw and cooling pulse at laser power Pb for  
 formation of the amorphous phase (data region) and erasing pulse at laser  
 power Pe for formation of the crystal phase (space region), where relation  
 of the laser powers are  $P_w > P_e > P_b$ , and the Pe has .gtoreq.2 conditions  
 showing the min. jitter values. The title app. is equipped with a laser  
 source, its controller, and a Pe power selection means. The recording  
 medium has low-jitter recording properties and excellent direct overwrite  
 (DOW) properties even under high recording linear velocity.  
 ST phase change optical recording medium direct overwrite jitter; information  
 recording app multipulse laser rewritable optical disk  
 IT Erasable optical disks  
 Recording apparatus  
 (app. for recording information in phase-change optical recording  
 medium by irradiation of multipulse laser beam)  
 IT Laser radiation  
 (pulsed; app. for recording information in phase-change optical  
 recording medium by irradiation of multipulse laser beam)  
 IT \*\*\*524009-12-9\*\*\*  
 RL: DEV (Device component use); USES (Uses)  
 (recording layer; app. for recording information in phase-change  
 optical recording medium by irradiation of multipulse laser beam)

L7 ANSWER 19 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:334349 CAPLUS  
 DN 138:329066  
 ED Entered STN: 02 May 2003  
 TI Information recording medium  
 IN Shinotsuka, Michiaki  
 PA Ricoh Company, Ltd., Japan  
 SO U.S. Pat. Appl. Publ., 22 pp.

CODEN: USXXCO  
DT Patent  
LA English  
IC ICM G11B007-24  
INCL 369275400; 430270130; 369283000  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003081537	A1	20030501	US 2002-245404	20020917
	JP 2003091874	A2	20030328	JP 2001-283251	20010918
	JP 2003115129	A2	20030418	JP 2001-306408	20011002
	JP 2003228884	A2	20030815	JP 2002-341620	20021126
PRAI	JP 2001-283251	A	20010918		
	JP 2001-306408	A	20011002		
	JP 2001-360178	A	20011127		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003081537	ICM	G11B007-24
	INCL	369275400; 430270130; 369283000
	IPCI	G11B0007-24 [ICM,7]
	NCL	369/275.400
	ECLA	G11B007/243; G11B007/254; G11B007/257; G11B007/258
JP 2003091874	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]
JP 2003115129	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]
JP 2003228884	IPCI	G11B0007-24 [ICM,7]; G03C0001-725 [ICS,7]

AB An optical recording medium configured with a light reflection layer; a first protection layer; a recording layer contg. a phase-change material which changes between cryst. and amorphous phases by a light irradiation; a second protection layer; and one of a cover layer and a protective coating layer disposed on a substrate in this order; and in which the light reflection layer is formed of one of an Al alloy and an Ag alloy; the first protection layer has a ZnS-SiO2 mixt. layer which contains a mixt. of ZnS and SiO2, and a intermediate layer having higher thermal cond. than the ZnS-SiO2 mixt. layer; the intermediate layer is formed on the side of the light reflection layer; the recording layer comprises Ge, Sb, and Te as main elements; and the second protection layer comprises a mixt. of ZnS and SiO2.

ST information recording medium  
IT Coating materials  
Optical disks  
Optical recording materials  
(information recording medium)

IT Films  
(reflective; information recording medium)  
IT 1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 1344-28-1, Aluminum oxide, uses 7631-86-9, Silica, uses 24304-00-5, Aluminum nitride 57686-82-5 \*\*\*484058-50-6\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(information recording medium contg.)

L7 ANSWER 20 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:240226 CAPLUS  
DN 138:262763  
ED Entered STN: 28 Mar 2003  
TI Phase-changeable optical recording material with rapid cooling structure  
IN Shinotsuka, Michiaki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 73  
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2003091874	A2	20030328	JP 2001-283251	20010918
	US 2003081537	A1	20030501	US 2002-245404	20020917
PRAI	JP 2001-283251	A	20010918		
	JP 2001-306408	A	20011002		
	JP 2001-360178	A	20011127		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003091874	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]
US 2003081537	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-00 [N,C]; G11B0007-0045 [N,A]; G11B0007-24 [N,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258 [I,A]
	NCL	369/275.400
	ECLA	G11B007/243; G11B007/254; G11B007/257; G11B007/258
AB		The material, using phase change between crystal and amorphous by irradiation of light, comprises a pregrooved support successively coated with (A) a reflection and heat radiation layer made of Al alloy, (B) 1st protective layer successively comprising (a) Ta2O5 layer and (b) a layer made of mixture of ZnS and SiO2 from the A layer side, (C) a recording layer mainly comprising Ge, Sb, and Te, (D) 2nd protective layer made of a mixture of ZnS and SiO2, and (E) an adhesive layer and a cover layer. The material is capable of rapid cooling and suited for high speed recording.
ST		phase changeable writable optical recording material; protective layer tantalum oxide zinc sulfide silica; germanium tellurium antimony optical recording material
IT		Polycarbonates, uses RL: DEV (Device component use); USES (Uses) (cover layer; phase-changeable optical recording material with rapid cooling structure)
IT		Optical ROM disks Optical recording materials (rewritable; phase-changeable optical recording material with rapid cooling structure)
IT		403501-78-0, DA 8310 RL: DEV (Device component use); USES (Uses) (adhesive layer; phase-changeable optical recording material with rapid cooling structure)
IT		1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses RL: DEV (Device component use); USES (Uses) (protective layer; phase-changeable optical recording material with rapid cooling structure)
IT		***484058-50-6*** RL: DEV (Device component use); USES (Uses) (recording layer; phase-changeable optical recording material with rapid cooling structure)
IT		156653-68-8 RL: DEV (Device component use); USES (Uses) (reflection and heat radiation layer; phase-changeable optical recording material with rapid cooling structure)

L7 ANSWER 21 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:240223 CAPLUS  
DN 138:278492  
ED Entered STN: 28 Mar 2003  
TI Multilayer phase change type information recording medium  
IN Iwasa, Hiroyuki; Miura, Hiroshi; Shinotsuka, Michiaki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003091869	A2	20030328	JP 2001-282959	20010918
PRAI	JP 2001-282959		20010918		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2003091869	ICM	G11B007-24
		ICS	G11B007-24
		IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]
AB	The invention relates to a phase change type optical disk including two recording layers, wherein the recording layer includes a Bi-contg. crystn. acceleration layer and shows the metastable Sb3Te phase of the space group Fm3m. The optical disk can be initialized by a first initialization step.		
ST	multilayer phase change optical disk crystn acceleration layer initialization		
IT	Erasable optical disks (multilayer phase change type information recording medium)		
IT	1304-82-1, Bismuth telluride 7440-69-9, Bismuth, processes 11149-21-6 12666-03-4 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses) (crystn. accelerator layer of multilayer phase change type optical disk)		
IT	384829-16-7	384829-18-9	384829-19-0 ***384829-22-5*** 384829-26-9 384829-32-7 384829-33-8 384829-35-0 384829-38-3 384829-40-7 384829-41-8 384829-43-0 384829-44-1 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses) (recording layer of multilayer phase change type optical disk)

L7 ANSWER 22 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:240222 CAPLUS  
DN 138:262761  
ED Entered STN: 28 Mar 2003  
TI Phase changeable optical recording material with silver reflection layer  
IN Yamada, Katsuyuki; Narumi, Shinya  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 73

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003091867	A2	20030328	JP 2001-283993	20010918
PRAI	JP 2001-283993		20010918		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2003091867	ICM	G11B007-24
		ICS	G11B007-24; B41M005-26
		IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]
AB	The material, comprising a substrate successively coated with an under protective layer, an optical recording layer, an upper protective layer with thickness D(TL), and a reflection layer comprising Ag (purity .gtoreq.99%) with thickness D(Ag), satisfies that (1) 5 .times. D(TL) .ltoreq. D(Ag) .ltoreq. 15 .times. D(TL), (2) the main component of the recording layer comprises an alloy A.alpha.B.beta.Sb.gamma.Te.delta. (A = Ag and/or Ge; B = In and/or Ga and/or Bi; .alpha., .beta., .gamma., .delta. = at. %) satisfying 0.001 .ltoreq. .alpha./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.05, 0.01 .ltoreq. .beta./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.10, 0.65 .ltoreq. .gamma./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.85, 0.10 .ltoreq. .delta./(.alpha. + .beta. + .gamma. + .delta.) .ltoreq.0.27, .beta./alpha. .gtoreq.1, and (3) upper		

limit of recrystn. linear velocity of the recording layer (V) is 7-12 m/s.  
In the material, V may be 14-21 m/s. The material shows good storage stability and is suited for high multi-speed recording.

ST phase change optical recording material; silver reflection layer optical recording material; antimony tellurium silver germanium indium gallium bismuth

IT Optical recording materials  
(phase changeable optical recording material with silver reflection layer)

IT Optical ROM disks  
(rewritable; phase changeable optical recording material with silver reflection layer)

IT 7440-22-4, Silver, uses  
RL: DEV (Device component use); USES (Uses)  
(phase changeable optical recording material with high purity silver reflection layer)

IT \*\*\*502454-85-5\*\*\* 502454-86-6  
RL: DEV (Device component use); USES (Uses)  
(recording layer; phase changeable optical recording material with high purity silver reflection layer)

L7 ANSWER 23 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:152466 CAPLUS  
DN 138:178306  
ED Entered STN: 28 Feb 2003  
TI Rewritable optical recording material with dielectric protective layer containing zirconia  
IN Onagi, Nobuaki; Miura, Hiroshi  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 73

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003059101	A2	20030228	JP 2001-241170	20010808
PRAI JP 2001-241170		20010808		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003059101	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]

AB The material, comprising a support successively coated with a reflection radiation layer, an under dielec. protective layer, a phase-change recording layer, an upper dielec. protective layer, and a resin protective layer, is characterized by that the under and/or upper dielec. protective layers essentially contain partially stabilized zirconia essentially contg. ZrO2 and added with SiO2. As the protective layer shows toughness and mech. strength, the material shows high sensitivity and re-writable many times.

ST optical recording material protective layer zirconia; zirconia silica yttria dielec protective layer

IT Optical disks  
(phase-change; rewritable optical recording material with dielec. protective layer contg. zirconia)

IT \*\*\*406496-61-5\*\*\* , Antimony 68, germanium 2, indium 5, silver 1, tellurium 24 (atomic) \*\*\*484058-50-6\*\*\* , Antimony 70, germanium 3, indium 3, silver 1, tellurium 23 (atomic) 497232-20-9, Antimony 70, germanium 3, indium 2, silver 1, tellurium 24 (atomic)  
RL: DEV (Device component use); USES (Uses)  
(recording layer; rewritable optical recording material with dielec. protective layer contg. zirconia)

IT 7440-22-4, Silver, uses 12732-52-4, Silver 99, zinc 1 (atomic)  
RL: DEV (Device component use); USES (Uses)

(reflection layer; rewritable optical recording material with dielec.  
protective layer contg. zirconia)  
IT 497232-15-2, Yttrium zinc zirconium oxide sulfide  
(Y0.02Zn0.8Zr0.19O0.41S0.8)  
RL: DEV (Device component use); USES (Uses)  
(under protective layer; rewritable optical recording material with  
dielec. protective layer contg. zirconia)  
IT 497232-18-5, Yttrium zirconium oxide silicate (Y0.05Zr0.88O1.62(SiO4)0.1)  
497232-22-1, Yttrium zinc zirconium oxide sulfide  
(Y0.01Zn0.8Zr0.2O0.4S0.8)  
RL: DEV (Device component use); USES (Uses)  
(upper protective layer; rewritable optical recording material with  
dielec. protective layer contg. zirconia)

L7 ANSWER 24 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:152464 CAPLUS  
DN 138:178305  
ED Entered STN: 28 Feb 2003  
TI Over-writable phase-change optical recording material  
IN Nakamura, Yuki; Kato, Masanori  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-0045  
ICS B41M005-26; G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 73  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003059053	A2	20030228	JP 2001-252056	20010822
PRAI	JP 2001-252056		20010822		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003059053	ICM	G11B007-0045
	ICS	B41M005-26; G11B007-24
	IPCI	G11B0007-0045 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7]

AB The material, directly over-writable .gtoreq.1 time, has lowest recording  
linear velocity (L) .gtoreq.3.4 m/s, is characterized by that (1)  
information about L and highest recording linear velocity (H) or H/L is  
recorded and (2) (a) H/L = 4.0-6.0 or (b) (H - L) = 11-35 m/s. The  
material is re-writable, recording and erasing information at linear  
velocity .gtoreq.14 m/s, and also shows good recording characteristic at  
low linear velocity.  
ST phase change optical recording material; linear velocity optical recording  
material  
IT Erasable optical disks  
(over-writable phase-change optical recording material with controlled  
linear velocity)  
IT Optical recording materials  
(rewritable; over-writable phase-change optical recording material with  
controlled linear velocity)  
IT \*\*\*497227-19-7\*\*\* , Antimony 74, germanium 2, indium 5, silver 1,  
tellurium 18 (atomic)  
RL: DEV (Device component use); USES (Uses)  
(recording layer; over-writable phase-change optical recording material  
with controlled linear velocity)  
IT 7440-22-4, Silver, uses  
RL: DEV (Device component use); USES (Uses)  
(reflection layer; over-writable phase-change optical recording  
material with controlled linear velocity)

L7 ANSWER 25 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:56618 CAPLUS  
DN 138:98276  
ED Entered STN: 24 Jan 2003  
TI Optical recording material with sulfur-resistant barrier layer

IN Onagi, Nobuaki; Ito, Kazunori; Yuzuhara, Hajime  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003022570	A2	20030124	JP 2001-209640	20010710
PRAI	JP 2001-209640		20010710		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003022570	ICM	G11B007-24
	ICS	G11B007-24; G11B007-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]

AB In the material comprising a support coated with an under dielec.  
 protective layer, a phase-changeable recording layer, an upper dielec.  
 protective layer, a sulfur-resistant barrier layer, and a reflection and  
 heat-radiation layer mainly contg. Ag, the barrier layer mainly contains  
 SiC and AlN. The barrier layer is formed by magneto-electron sputtering  
 using Si-Al as a target and Ar, N, and methane mixed gas as a sputtering  
 gas. The material shows high sensitivity and wide power margin and is  
 useful for CAV recording.

ST optical recording material phase changeable; barrier layer aluminum  
 nitride silicon carbide; magnetoelectron sputtering silicon aluminum target  
 barrier layer; argon nitrogen methane sputtering gas

IT Optical recording materials  
 (optical recording material with sulfur-resistant barrier layer contg.  
 SiC and AlN)

IT 7631-86-9, Silicon oxide, uses  
 RL: DEV (Device component use); USES (Uses)  
 (optical recording material with sulfur-resistant barrier layer contg.  
 SiC and AlN)

IT 409-21-2P, Silicon carbide, preparation 24304-00-5P, Aluminum nitride  
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP  
 (Preparation); USES (Uses)  
 (optical recording material with sulfur-resistant barrier layer contg.  
 SiC and AlN)

IT 1314-98-3, Zinc sulfide, uses  
 RL: DEV (Device component use); USES (Uses)  
 (protective layer; optical recording material with sulfur-resistant  
 barrier layer contg. SiC and AlN)

IT \*\*\*484058-50-6\*\*\*, Antimony 70, germanium 3, indium 3, silver 1,  
 tellurium 23 (atomic)  
 RL: DEV (Device component use); USES (Uses)  
 (recording layer; optical recording material with sulfur-resistant  
 barrier layer contg. SiC and AlN)

IT 7440-22-4, Silver, uses  
 RL: DEV (Device component use); USES (Uses)  
 (reflection layer; optical recording material with sulfur-resistant  
 barrier layer contg. SiC and AlN)

IT 74-82-8, Methane, uses 7440-37-1, Argon, uses 7727-37-9, Nitrogen,  
 uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (sputtering gas; sulfur-resistant barrier layer contg. SiC and AlN  
 formed by magneto-electron sputtering)

IT 7429-90-5, Aluminium, uses 7440-21-3, Silicon, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (sputtering target; sulfur-resistant barrier layer contg. SiC and AlN  
 formed by magneto-electron sputtering)



TI Optical information recording medium and information recording method  
 using the recording medium  
 IN Yamada, Katsuyuki; Narumi, Shinya  
 PA Ricoh Company, Ltd., Japan  
 SO U.S. Pat. Appl. Publ., 13 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G11B007-24  
 ICS G11B007-26  
 INCL 430270130; 369059110; 369275400; 369288000; 430945000; 430275100;  
 428064400  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003008236	A1	20030109	US 2002-179101	20020624
	JP 2003006925	A2	20030110	JP 2001-193779	20010626
	JP 2003006928	A2	20030110	JP 2001-193780	20010626
	EP 1280142	A1	20030129	EP 2002-254436	20020625
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	CN 1396591	A	20030212	CN 2002-124419	20020626
PRAI	JP 2001-193779	A	20010626		
	JP 2001-193780	A	20010626		

CLASS  
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES  
 -----  
 US 2003008236 ICM G11B007-24  
 ICS G11B007-26  
 INCL 430270130; 369059110; 369275400; 369288000; 430945000;  
 430275100; 428064400  
 IPCI G11B0007-24 [ICM,7]; G11B0007-26 [ICS,7]  
 NCL 430/270.130  
 ECLA G11B007/24; G11B007/243; G11B007/258  
 JP 2003006925 IPCI G11B0007-24 [ICM,7]  
 JP 2003006928 IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]  
 EP 1280142 IPCI G11B0007-24 [ICM,7]  
 ECLA G11B007/24; G11B007/243; G11B007/258  
 CN 1396591 IPCI G11B0007-24 [ICM,7]; G11B0011-00 [ICS,7]  
 AB An optical information recording medium includes a substrate, a light  
 absorbing layer which is located overlying the substrate and in which  
 marks are formed to store information and a light reflection layer located  
 overlying the light absorbing layer including a crystal. The optical  
 information recording medium satisfies the relationship:  
 $Lt/4.Lt_{oreq}.Lc.Lt_{oreq}.Lm$ , ( $Lc$  = the av. particle diam. of the crystal of  
 the light reflection layer;  $Lm$  = min. length of the marks;  $Lt$  = thickness  
 of the light reflection layer).  
 ST optical information recording reflective protective absorbing layer  
 IT Optical recording materials  
 (erasable; optical information recording medium and method)  
 IT Polycarbonates, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (substrate; optical information recording medium and method contg.)  
 IT 483348-34-1 \*\*\*483348-35-2\*\*\* 483348-36-3  
 RL: DEV (Device component use); USES (Uses)  
 (light absorbing layer; optical information recording medium and method  
 contg.)  
 IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-92-1, Lead, uses  
 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-02-0,  
 Nickel, uses 7440-05-3, Palladium, uses 7440-36-0, Antimony, uses  
 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses  
 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses  
 RL: DEV (Device component use); USES (Uses)  
 (light reflection layer; optical information recording medium and  
 method contg.)  
 IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses  
 7631-86-9, Silica, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (protective layer; optical information recording medium and method  
 contg.)

L7 ANSWER 27 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:976130 CAPLUS  
 DN 138:47391  
 ED Entered STN: 27 Dec 2002  
 TI Optical recording medium having protective layer with controlled refractive index and thickness  
 IN Onagi, Nobuaki; Ito, Kazunori; Yuzuhara, Hajime  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24; B41M005-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002373452	A2	20021226	JP 2001-179950	20010614
PRAI	JP 2001-179950		20010614		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002373452	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]

AB The optical recording medium has a substrate, a 1st protective layer, a phase-change recording layer, a 2nd protective layer, and a reflective heat-radiating layer, and the 1st protective layer shows refractive index to wavelength for readout .ltoreq.1.8 and has thickness 50-75 nm. Preferably the phase-change recording layer mainly comprises Sb and Te and contains Ge, In, and/or Ag and the 2nd protective layer has thickness .ltoreq.19 nm. A transparent protective film may be formed between the reflective heat-radiating layer and the 2nd protective layer usually made of ZnS-SiO2 when Ag alloy is used as the heat-radiating layer to prevent degrdn. of Ag alloy upon sulfidation. The medium shows good overwrite characteristics.

ST erasable phase change optical disk protective layer; silver alloy reflective heat radiating layer optical disk

IT Erasable optical disks  
 (optical recording medium having protective layer with controlled refractive index and thickness)

IT Silver alloy, base  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (reflective heat-radiating layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (ZnS-SiO2 protective layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT \*\*\*478920-46-6\*\*\* \*\*\*478920-47-7\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (phase-change recording layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT 11122-18-2, Aluminum 98, copper 2 (atomic) 203397-04-0, Copper 2, silver 98 (atomic)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (reflective heat-radiating layer; optical recording medium having protective layer with controlled refractive index and thickness)

IT 409-21-2, Silicon carbide, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (transparent protective film; optical recording medium having protective layer with controlled refractive index and thickness)

L7 ANSWER 28 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:921304 CAPLUS  
 DN 138:18111  
 ED Entered STN: 04 Dec 2002  
 TI Sputtering target and optical recording medium obtained by using it

IN Suzuki, Eiko; Kageyama, Yoshiyuki; Harigai, Masato; Tashiro, Hiroko;  
 PA Miura, Hiroshi; Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki  
 SO Ricoh Co., Ltd., Japan  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-006; G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002347349	A2	20021204	JP 2001-164792	20010531
PRAI	JP 2001-79830	A	20010321		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002347349	ICM	B41M005-26
	ICS	G11B007-006; G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-006 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]

AB The target has a compn. .gtoreq.0.9 (at. ratio) of which is represented by X.alpha.Sb.beta.Te.gamma. (X = In and/or Ga; .alpha. = 0.01-0.1; .beta. = 0.60-0.90; .gamma. = 1 - .alpha. - .beta.). Optical recording medium having a recording layer obtained by using the target is also claimed. When laser beam with intensity 8-15 times reprodn. power is irradiated to the rotating recording medium, the recording layer is in crystal state at rotational linear velocity .ltoreq.7 m/s (or .ltoreq.16 m/s) and starts to become amorphous at 7-16 m/s (or 16-20 m/s). The recording medium is suitable for high linear velocity recording and has high capacity (equal to or higher than DVD-ROM), storage stability, and excellent overwrite performance.

ST sputtering target optical recording medium linear velocity; gallium antimony tellurium sputtering target optical recording; indium antimony tellurium alloy sputtering target optical recording

IT Optical disks  
 Optical recording materials  
 Sputtering targets

(sputtering target for recording layer of optical recording medium for high linear velocity recording and storage stability)

IT 405114-43-4, Antimony 70, gallium 6, tellurium 24 (atomic) 405114-44-5, Antimony 70, gallium 6, silver 3, tellurium 21 (atomic) 405114-45-6, Antimony 70, gallium 6, germanium 3, tellurium 21 (atomic) 405114-46-7, Antimony 70, gallium 6, germanium 3, silver 1, tellurium 20 (atomic) 477572-04-6, Antimony 66, gallium 5, tellurium 29 (atomic) 477572-05-7, Antimony 65, gallium 5, germanium 3, tellurium 27 (atomic) 477572-06-8, Antimony 64, gallium 5, germanium 3, silver 2, tellurium 26 (atomic) \*\*\*477572-07-9\*\*\* 477572-08-0, Antimony 78, gallium 5, tellurium 17 (atomic) 477572-09-1, Antimony 77, gallium 5, germanium 3, tellurium 15 (atomic) 477572-10-4, Antimony 76, gallium 5, germanium 3, silver 2, tellurium 14 (atomic) \*\*\*477572-11-5\*\*\* , Antimony 82, germanium 3, indium 5, silver 2, tellurium 8 (atomic)

RL: TEM (Technical or engineered material use); USES (Uses)  
 (sputtering target for recording layer of optical recording medium for high linear velocity recording and storage stability)

L7 ANSWER 29 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:833367 CAPLUS  
 DN 137:343941  
 ED Entered STN: 01 Nov 2002  
 TI Phase-change optical recording medium and disk comprising crystallization accelerating layer  
 IN Hanaoka, Katsunari; Shibata, Kiyoto; Shinkai, Masaru; Aman, Yasumoto;  
 Miura, Hiroshi; Harigaya, Mokoto  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 23 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English

IC ICM G11B007-24  
 INCL 430270130  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002160306	A1	20021031	US 2002-62885	20020131
	JP 2003157570	A2	20030530	JP 2001-319887	20011017
PRAI	JP 2001-24105	A	20010131		
	JP 2001-28496	A	20010205		
	JP 2001-273406	A	20010910		
	JP 2001-319887	A	20011017		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	US 2002160306	ICM	G11B007-24
		INCL	430270130
		IPCI	G11B0007-24 [ICM,7]
		NCL	430/270.130
		ECLA	G11B007/0045P; G11B007/243
	JP 2003157570	IPCI	G11B0007-24 [ICM,7]; G11B0007-0045 [ICS,7]
AB	A phase-change recording medium comprising Sb3Te compds. which are formed by initialization-less process steps is provided through the formation of recording media having layered structure including suitably selected materials together with methods for fabricating such recording media, thereby leading to DVD-ROM compatible recording media capable of achieving recording d. of 2.6 GB or more on a disk of 120 mm in diam. The recording medium includes an Sb3Te recording layer and a crystn. accelerating layer formed contiguously with the recording layer. The crystn. accelerating layer is formed to suitably include impurities as record stabilization agents. At least one addnl. impurity layer may be formed contiguous to said recording and/or crystn. accelerating layer. During recording steps accompanying phase transformation, the impurities in the crystn. accelerating layer diffuse into the recording layer resulting in a higher impurity content in the recording layer than that immediately after the layer formation.		
ST	phase change optical recording disk crystn accelerating layer DVDROM; stabilization impurity phase change optical recording disk DVDROM		
IT	Optical disks		
	Optical recording materials		
	(phase-change; phase-change optical recording medium and disk comprising crystn. accelerating layer and impurity layer)		
IT	7440-69-9P, Bismuth, preparation 124849-27-0P, Bismuth 50, germanium 50 (atomic) 126185-51-1P 372947-00-7P 474010-87-2P 474010-91-8P, Bismuth 42, germanium 58 (atomic) 474010-96-3P, Bismuth 40, germanium 60 (atomic) 474011-01-3P 474011-06-8P 474011-13-7P 474012-43-6P 474012-46-9P		
	RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)		
	(crystn. accelerating layer; phase-change optical recording medium and disk comprising crystn. accelerating layer)		
IT	129891-96-9P, Gallium 30, indium 70 (atomic) 474012-60-7P 474012-63-0P 474012-66-3P 474012-71-0P 474012-74-3P		
	RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)		
	(impurity layer; phase-change optical recording medium and disk comprising crystn. accelerating layer and impurity layer)		
IT	474011-48-8	474011-51-3	474011-56-8 474011-59-1 474011-62-6
	474011-66-0	474011-69-3	474011-75-1 474011-80-8 474011-84-2
	474011-89-7	474011-92-2	474012-00-5 474012-09-4 474012-13-0
	474012-16-3	474012-20-9	474012-24-3 474012-29-8 474012-36-7
	RL: FMU (Formation, unclassified); TEM (Technical or engineered material use); FORM (Formation, nonpreparative); USES (Uses)		
	(intermediate layer; phase-change optical recording medium and disk comprising crystn. accelerating layer in relation to intermediate layer compn. formed after irradiation.)		
IT	474012-77-6	474012-80-1	474012-82-3 474012-85-6 ***474012-89-0***
	474012-92-5	474012-95-8	
	RL: FMU (Formation, unclassified); TEM (Technical or engineered material use); FORM (Formation, nonpreparative); USES (Uses)		
	(phase-change optical recording medium and disk comprising crystn.		

accelerating layer and impurity layer in relation to layer compn. after recording)  
IT 124307-63-7P, Antimony 80, tellurium 20 (atomic) 212206-00-3P  
470715-74-3P 470715-78-7P 474011-26-2P 474011-29-5P 474011-33-1P  
474011-38-6P 474011-43-3P 474012-56-1P 474012-57-2P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(recording layer; phase-change optical recording medium and disk comprising crystn. accelerating layer)

L7 ANSWER 30 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:714346 CAPLUS

DN 137:270664

ED Entered STN: 20 Sep 2002

TI Phase-change optical recording media having crystallization accelerating layer and/or recording layer formed with sputtering gas containing helium and method for manufacture thereof

IN Shibata, Kiyoto; Shinkai, Masaru; Aman, Yasutomo; Hanaoka, Katsushige; Miura, Hiroshi

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26

ICS B41M005-26; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002269859	A2	20020920	JP 2001-70611	20010313
PRAI	JP 2001-70611		20010313		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002269859	ICM	G11B007-26
	ICS	B41M005-26; G11B007-24
	IPCI	G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7]

AB The title phase-change optical recording medium has a recording layer, a dielec. layer, a reflective heat-radiating layer, and a crystn. accelerating layer, which is disposed next to the recording layer on a substrate, wherein the crystn. accelerating layer and/or the recording layer are formed by sputtering using sputtering gas contg. He. The optical recording medium provides the thin crystn. accelerating layer with the improved crystn. acceleration.

ST phase optical recording media crystn accelerating layer manuf

IT Optical disks

Optical recording materials

Sputtering

(phase-change optical recording media and method for manuf. thereof)

IT 7440-69-9P, Bismuth, processes 12714-59-9P, Antimony 20, bismuth 80 (atomic)

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)

(crystn. accelerating layer of optical recording media)

IT 124307-63-7P, Antimony 79.5, tellurium 20.5 (atomic) \*\*\*461669-03-4P\*\*\*  
461669-04-5P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)

(recording layer of optical recording media)

IT 7440-37-1, Argon, processes 7440-59-7, Helium, processes

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)

(sputtering gas for forming crystn. accelerating layer and/or recording layer of optical recording media)

L7 ANSWER 31 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:714344 CAPLUS  
 DN 137:255444  
 ED Entered STN: 20 Sep 2002  
 TI Sputtering target for manufacturing recording layer of phase-change optical recording media  
 IN Suzuki, Eiko; Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi; Yuzuhara, Hajime; Onagi, Nobuaki; Tashiro, Hiroko; Tani, Katsuhiko; Iwata, Kaneyuki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-26  
 ICS B41M005-26; C23C014-34; G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002269857	A2	20020920	JP 2001-66510	20010309
PRAI	JP 2001-66510		20010309		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 2002269857	ICM	G11B007-26
	ICS	B41M005-26; C23C014-34; G11B007-24
	IPCI	G11B0007-26 [ICM,7]; B41M0005-26 [ICS,7]; C23C0014-34 [ICS,7]; G11B0007-24 [ICS,7]

AB The title sputtering target contains mainly chalcogen and an additive forming NaCl structure crystals with the chalcogen. The sputtering target provides phase-change optical recording media of high d., stable repeated recording characteristics, and good storageability.  
 ST sputtering target manufg recording layer phase optical media  
 IT Optical disks  
 Sputtering  
     (sputtering target for manufg. optical recording media)  
 IT Optical recording materials  
     (sputtering target for manufg. recording layer of phase-change optical recording media)  
 IT \*\*\*461463-00-3\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
     (sputtering target for manufg. optical Ge recording media)  
 IT 213685-67-7 461462-87-3 461462-88-4 461462-89-5 461462-90-8  
 461462-91-9 461462-92-0 461462-93-1 461462-94-2 461462-95-3  
     \*\*\*461462-96-4\*\*\*      \*\*\*461462-97-5\*\*\*      461462-98-6  
     \*\*\*461462-99-7\*\*\*      \*\*\*461463-01-4\*\*\*      \*\*\*461463-02-5\*\*\*  
     \*\*\*461463-03-6\*\*\*      \*\*\*461463-04-7\*\*\*      \*\*\*461463-05-8\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
     (sputtering target for manufg. optical recording media)

L7 ANSWER 32 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:714332 CAPLUS  
 DN 137:255435  
 ED Entered STN: 20 Sep 2002  
 TI Optical recording medium  
 IN Yuzuhara, Hajime; Onagi, Nobuaki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002269824	A2	20020920	JP 2001-67639	20010309
PRAI	JP 2001-67639		20010309		

CLASS  
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES  
-----  
JP 2002269824 ICM G11B007-24  
ICS G11B007-24  
IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]  
AB The invention relates to an optical recording medium, such as a phase-change rewritable optical disk, comprising a protective dielec. layer, a recording layer, a upper protective layer, and a reflecting heat-dissipating layer, fabricated in that order on a light-incident transparent substrate, wherein the SiC-based material having the thermal cond. less than that of ZnS.cntdot.SiO2 mixt. is utilized as the upper protective layer for improving the high-speed overwrite cyclability.  
ST optical disk rewritable silicon carbide protective film  
IT Optical disks  
(rewritable; optical recording medium)  
IT Polycarbonates, uses  
RL: DEV (Device component use); USES (Uses)  
(substrate; optical recording medium)  
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses  
RL: DEV (Device component use); USES (Uses)  
(lower protective layer; optical recording medium)  
IT 443284-25-1 \*\*\*443284-26-2\*\*\* \*\*\*443284-27-3\*\*\* 443284-28-4  
RL: DEV (Device component use); USES (Uses)  
(recording layer; optical recording medium)  
IT 138928-32-2  
RL: DEV (Device component use); USES (Uses)  
(reflective layer; optical recording medium)  
IT 409-21-2, Silicon carbide, uses 12069-94-2, Niobium carbide  
12070-06-3, Tantalum carbide 12070-08-5, Titanium carbide 12070-14-3,  
Zirconium carbide  
RL: DEV (Device component use); USES (Uses)  
(upper protective layer; optical recording medium)  
L7 ANSWER 33 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:714331 CAPLUS  
DN 137:255434  
ED Entered STN: 20 Sep 2002  
TI Phase-change optical disk and its production method  
IN Shinkai, Masaru; Onagi, Nobuaki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; G11B007-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2002269823	A2	20020920	JP 2001-67620	20010309
PRAI	JP 2001-67620		20010309		

CLASS  
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES  
-----  
JP 2002269823 ICM G11B007-24  
ICS G11B007-24; G11B007-26  
IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]

AB The invention relates to a phase-change optical disk, such as a rewritable optical disk, comprising a 1st dielec. layer, a recording layer, a 2nd dielec. layer, and a reflective layer, fabricated in that order on a transparent substrate, wherein one of the dielec. layers is made of the mixt. of ZnS and SiC for prepg. the dielec. layer with appropriate thermal cond. Also claimed is the prodn. method of the optical disk by sputtering techniques.  
ST optical disk rewritable zinc sulfide silicon carbide dielec layer  
IT Sputtering  
(in fabrication of rewritable optical disk)  
IT Optical disks

(rewritable; phase-change optical disk)

IT Polycarbonates, uses  
 RL: DEV (Device component use); USES (Uses)  
 (substrate; phase-change optical disk)

IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses  
 7631-86-9, Silica, uses  
 RL: DEV (Device component use); USES (Uses)  
 (dielec. layer; phase-change optical disk)

IT \*\*\*404003-64-1\*\*\*  
 RL: DEV (Device component use); USES (Uses)  
 (recording layer; phase-change optical disk)

L7 ANSWER 34 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:714328 CAPLUS  
 DN 137:255433  
 ED Entered STN: 20 Sep 2002  
 TI Phase-change optical disk  
 IN Shinozuka, Michiaki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24; B41M005-26; C03C003-32; C23C014-06  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002269815	A2	20020920	JP 2001-74122	20010315
PRAI	JP 2001-74122		20010315		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002269815	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26; C03C003-32; C23C014-06
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; C03C0003-32 [ICS,7]; C23C0014-06 [ICS,7]

AB The invention relates to a phase-change optical disk capable of high d.  
 recording, comprising a 1st recording layer, and a 2nd recording layer  
 formed on the light-incident substrate, wherein the 1st recording layer is  
 made of the chalcogenide glass contg. Sb and Te for improving the  
 recording sensitivity.

ST optical disk phase change chalcogenide glass antimony tellurium

IT Optical disks  
 (phase-change optical disk)

IT Chalcogenide glasses  
 Polycarbonates, uses  
 RL: DEV (Device component use); USES (Uses)  
 (substrate; phase-change optical disk)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses  
 RL: DEV (Device component use); USES (Uses)  
 (protective layer; phase-change optical disk)

IT 52896-61-4 461463-57-0 461463-58-1 \*\*\*461463-59-2\*\*\* 461463-60-5  
 461463-61-6 461463-62-7 461463-63-8 461463-64-9 461463-65-0  
 461463-66-1  
 RL: DEV (Device component use); USES (Uses)  
 (recording layer; phase-change optical disk)

L7 ANSWER 35 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:714320 CAPLUS  
 DN 137:270656  
 ED Entered STN: 20 Sep 2002  
 TI Phase change-type optical recording medium and optical recording method  
 IN Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-0045



ICS B41M005-26; G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002269742	A2	20020920	JP 2001-62358	20010306
PRAI	JP 2001-62358		20010306		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002269742	ICM	G11B007-0045
	ICS	B41M005-26; G11B007-24
	IPCI	G11B0007-0045 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-24 [ICS,7]

AB The phase change-type optical recording medium comprises a 1st dielec. protective layer, an AlInSbTeGe (A = Ag and/or Ga) phase change recording layer, a 2nd dielec. protective layer, a SiC layer, and a metal reflection layer in the order formed on a translucent substrate, wherein the 1st and 2nd dielec. protective layers is made of a mixt of ZnS and SiO2 and the metal reflection layer is made of Ag or an alloy thereof. Also claimed is the optical recording method which uses a recording pulse train consisting of multiple on-pulses and off-pulses and makes a const. angular velocity (CAV) possible.

ST phase change optical recording const angular velocity

IT Optical recording

(by recording pulse train consisting of multiple on-pulses and off-pulses)

IT Optical recording materials

(phase change-type optical recording material having AlInSbTeGe phase change recording layer)

IT Silver alloy, base

RL: DEV (Device component use); USES (Uses)

(phase change-type optical recording material from)

IT \*\*\*384829-20-3\*\*\*, Antimony 68.5, germanium 2, indium 5, silver 0.5, tellurium 24 (atomic) \*\*\*461668-38-2\*\*\*, Antimony 71, germanium 0.5, indium 5, silver 0.5, tellurium 23 (atomic)

RL: DEV (Device component use); USES (Uses)

(phase change-type optical recording layer)

IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses

7440-22-4, Silver, uses 7631-86-9, Silica, uses 461668-39-3, Antimony 72, gallium 1, germanium 2, indium 3, tellurium 22 (atomic)

RL: DEV (Device component use); USES (Uses)

(phase change-type optical recording material from)

L7 ANSWER 36 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:708687 CAPLUS

DN 137:239812

ED Entered STN: 18 Sep 2002

TI Phase-change-type erasable optical recording media with low jitter and their manufacture

IN Shibata, Kiyoto; Shinkai, Masaru; Aman, Yasutomo; Miura, Hiroshi; Hanaoka, Katsushige

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-24; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002264510	A2	20020918	JP 2001-66112	20010309
PRAI	JP 2001-66112		20010309		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002264510	ICM	B41M005-26

ICS G11B007-24; G11B007-26  
IPCI B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26  
[ICS,7]

AB The optical recording medium is characterized in that the recording layer is crystd. after deposition and shows relative reflection (ratio of reflection for non-recorded state to that for recorded state) >90%. The recording layer preferably contains semistable Sb<sub>3</sub>Te phase in the Fm3m space group. The recording media do not require initializing processes.

ST erasable optical recording medium jitter redn; phase change optical disk cryst recording layer

IT Optical memory devices  
(erasable; phase-change-type erasable optical recording media with low jitter)

IT 1304-82-1, Bismuth telluride (Bi<sub>2</sub>Te<sub>3</sub>) 7440-69-9, Bismuth, uses 12714-59-9, Antimony 20, bismuth 80 (atomic)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(crystn. acceleration layer; phase-change-type erasable optical recording media with low jitter)

IT 109195-73-5, Germanium 30, tellurium 70 (atomic) 116456-64-5, Aluminum 60, germanium 40 (atomic) 459862-18-1, Germanium 20, indium 80 (atomic)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(impurity layer; phase-change-type erasable optical recording media with low jitter)

IT 124307-63-7, Antimony 80, tellurium 20 (atomic) 128522-63-4, Antimony 75, tellurium 25 (atomic) 250296-03-8, Antimony 74, tellurium 26 (atomic) \*\*\*459862-11-4\*\*\* 459862-14-7, Antimony 72, germanium 6, tellurium 22 (atomic) \*\*\*459862-16-9\*\*\*  
RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layer; phase-change-type erasable optical recording media with low jitter)

IT 384829-45-2, Antimony telluride (Sb<sub>3</sub>Te)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(semistable phase, recording layer; phase-change-type erasable optical recording media with low jitter)

L7 ANSWER 37 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:693294 CAPLUS  
DN 137:239805  
ED Entered STN: 13 Sep 2002  
TI High-density erasable optical recording media for high-speed recording  
IN Yuzuhara, Hajime; Itô, Kazunori; Konagi, Nobuaki; Shinkai, Masaru  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 57

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002260281	A2	20020913	JP 2001-54778	20010228
	US 2003003395	A1	20030102	US 2002-85692	20020227
	US 6846611	B2	20050125		
PRAI	JP 2001-54778	A	20010228		
	JP 2001-59441	A	20010305		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002260281	ICM	G11B007-24
	ICS	G11B007-24
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]
US 2003003395	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258 [I,A]
	NCL	430/270.130
	ECLA	G11B007/243; G11B007/254; G11B007/257; G11B007/258

AB The optical recording medium, DVD, optical files, etc., comprises a transparent substrate, a lower dielec. protective layer, a phase-change

recording layer, an upper dielec. protective layer, and a reflective heat-radiation layer, wherein the upper dielec. protective layer comprises a mixt. of ZrO<sub>2</sub> and SiO<sub>2</sub> with a molar compn. of (ZrO<sub>2</sub>)<sub>100-x</sub>(SiO<sub>2</sub>)<sub>x</sub> (0 < x < 60; mol%). The upper protective layer may further contain ZnS. The optical media show good resistance to quick cycle of cooling and heating in recording.

ST erasable optical disk high speed recording; zirconia silica protective layer optical recording

IT Erasable optical disks  
(high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT 409-21-2, Silicon carbide, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(2nd dielec. protective layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT \*\*\*458568-87-1\*\*\* 458568-88-2 \*\*\*458568-89-3\*\*\* 458568-90-6  
RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT 7440-22-4, Silver, uses 12659-64-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(reflective layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

IT 1314-23-4, Zirconia, uses 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 174633-44-4, Silicon zirconium oxide 458568-86-0, Zinc zirconium oxide silicate sulfide (Zn<sub>0.65</sub>Zr<sub>0.35</sub>O<sub>0.5</sub>(SiO<sub>4</sub>)<sub>0.1</sub>SO<sub>0.65</sub>)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(upper dielec. protective layer; high-d. erasable optical disks having protective layers with low heat cond. for high-speed recording)

L7 ANSWER 38 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:673106 CAPLUS

DN 137:224197

ED Entered STN: 06 Sep 2002

TI Optical information recording disk with improved physical properties and excellent recording properties and its manufacture

IN Yuzuhara, Hajime; Ito, Kazunori; Onagi, Nobuaki; Narumi, Shinya; Yamada, Katsuyuki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-26  
ICS G11B007-0055; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002251792	A2	20020906	JP 2001-51267	20010226
PRAI	JP 2001-51267		20010226		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002251792	ICM	G11B007-26
	ICS	G11B007-0055; G11B007-24
	IPCI	G11B0007-26 [ICM,7]; G11B0007-0055 [ICS,7]; G11B0007-24 [ICS,7]

AB The invention relates to an optical disk comprised of a first transparent substrate, a lower dielec. protective layer, a phase change type recording layer, an upper dielec. protective layer, an upper second protective layer, a silver layer, and a second transparent substrate attached via org. adhesives, wherein the disk is irradiated by 5.0-15.0 mW/.mu.m<sup>2</sup> laser for initialization. The second protective layer is made up of SiC and the recording layer is made up of Ag, Ge, In, Sb, and Te.

ST optical information phase change recording disk manuf initialization process

IT Erasable optical disks  
(optical information recording disk with improved phys. properties and excellent recording properties and its manuf.)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)  
 (dielec. layer; optical information recording disk with improved phys.  
 properties and excellent recording properties)  
 IT 7440-22-4, Silver, uses  
 RL: DEV (Device component use); USES (Uses)  
 (metal layer; optical information recording disk with improved phys.  
 properties and excellent recording properties)  
 IT \*\*\*443284-26-2\*\*\* , Antimony 70, germanium 2, indium 4, silver 1,  
 tellurium 23 (atomic)  
 RL: DEV (Device component use); USES (Uses)  
 (phase change recording layer; optical information recording disk with  
 improved phys. properties and excellent recording properties)  
 IT 409-21-2, Silicon carbide, uses  
 RL: DEV (Device component use); USES (Uses)  
 (protective layer; optical information recording disk with improved  
 phys. properties and excellent recording properties)

L7 ANSWER 39 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:656247 CAPLUS  
 DN 137:192821  
 ED Entered STN: 30 Aug 2002  
 TI Phase change-type optical recording medium based on antimony and tellurium  
 IN Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi; Yuzuhara, Hajime;  
 Suzuki, Eiko; Onagi, Nobuaki; Tashiro, Hiroko  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24; B41M005-26; G11B007-0045  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002245663	A2	20020830	JP 2001-41010	20010216
PRAI JP 2001-41010		20010216		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002245663	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26; G11B007-0045
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]

AB The phase change-type optical recording medium has a phase change-type  
 recording layer represented  $XaSb_xTe_y$  ( $a.ltoeq.0.15$ ; and  $0.50.ltoeq.(x+y).ltoeq.0.90$ ;  $X = Ag, Cu, Au, Zn, B, Al, Ga, In, Si, Ge, Sn, Pb, N, Bi, La, Ce, Cd, and/or Tb$ ) and changes the cryst. phase to the amorphous phase  
 upon receiving a laser beam, wherein a reflectivity transition from high  
 level to low level by a CW laser irradsn. is 8-30 m/s and a recording  
 linear speed is 1.2-30 m/s. The use of addnl. elements other than Sb and  
 Te in the recording layer made high-d. recording possible.

ST antimony telluride optical recording disk  
 IT Telluride glasses  
 RL: DEV (Device component use); USES (Uses)  
 (antimony telluride; phase change-type optical recording medium based  
 on antimony and tellurium)  
 IT Optical disks  
 (phase change-type optical recording medium based on antimony and  
 tellurium)  
 IT 451503-73-4 \*\*\*451503-74-5\*\*\*  
 RL: DEV (Device component use); USES (Uses)  
 (phase change-type optical recording medium based on antimony and  
 tellurium)

IT 7429-90-5, Aluminum, uses 7439-91-0, Lanthanum, uses 7439-92-1, Lead,  
 uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-27-9,  
 Terbium, uses 7440-31-5, Tin, uses 7440-42-8, Boron, uses 7440-43-9,  
 Cadmium, uses 7440-45-1, Cerium, uses 7440-50-8, Copper, uses  
 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-57-5, Gold,  
 uses 7440-66-6, Zinc, uses 7440-69-9, Bismuth, uses 7440-74-6,  
 Indium, uses 7727-37-9, Nitrogen, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(phase change-type optical recording medium based on antimony and tellurium)

IT 7440-36-0, Antimony, uses  
RL: DEV (Device component use); USES (Uses)  
(telluride glass; phase change-type optical recording medium based on antimony and tellurium)

L7 ANSWER 40 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:636890 CAPLUS  
DN 137:192812  
ED Entered STN: 23 Aug 2002  
TI Rewritable optical recording material having having AgInSbTe-based recording layer and ZnO-based protective layer  
IN Onagi, Nobuaki; Tashiro, Hiroko; Harigai, Masato; Yuzuhara, Hajime; Ito, Kazunori  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 42, 56  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002237095	A2	20020823	JP 2001-31499	20010207
PRAI JP 2001-31499		20010207		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002237095	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]

AB The rewritable optical recoring material comprises a translucent substrate, a lower dielec. protective layer, a phase change-type recording layer, an upper dielec. protective layer, and a reflective heat-release layer, wherein the phase change-type recording layer is a melt erasing-type recording layer based on a AgInSbTe compn. and the upper dielec. protective layer is based on ZnO. The recording layer is sandwiched by the 2 dielec. protective layers having film thicknesses .ltoreq.25 nm. The upper dielec. protective layer contains oxides and nitrides, in addn. to ZnO .gtoreq.50%, but is free of Si-based substances. The rewritable optical recording material was able to increase a recording line speed without changing the compn. of the recording layer.

ST rewritable optical recoring material zinc oxide protective layer; antimony germanium indium silver tellurium optical recording layer

IT Coating materials  
Optical recording materials  
(Rewritable optical recoring material having AgInSbTe-based recording layer and ZnO-based protective layer)

IT 1314-13-2, Zinc oxide, uses 1344-28-1, Alumina, uses \*\*\*449762-51-0\*\*\*  
\*\*\*449762-52-1\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(Rewritable optical recoring material having AgInSbTe-based recording layer and ZnO-based protective layer)

L7 ANSWER 41 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:636886 CAPLUS  
DN 137:192811  
ED Entered STN: 23 Aug 2002  
TI Rewritable optical recording media and method for recording thereon  
IN Ito, Kazunori; Harigai, Masato; Shibaguchi, Takashi; Yuzuhara, Hajime; Suzuki, Eiko; Onagi, Nobuaki; Tashiro, Hiroko  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent

LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26; G11B007-0045  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002237088	A2	20020823	JP 2001-34043	20010209
PRAI	JP 2001-34043		20010209		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002237088	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26; G11B007-0045
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]

AB The title recording media has a first dielec. layer, a phase-change layer, a second dielec. layer, and a metal reflective layer on a transparent substrate, wherein the first and second dielec. layers are made of a mixt. of ZnS and SiO<sub>2</sub> and wherein the phase change layer is made of AgInSbTe (0<a.ltoreq.0.01; 0.03.ltoreq.b.ltoreq.0.10; 0.40.ltoreq.d.ltoreq.0.70; a+b+c+d =1; 0.60.ltoreq.r.ltoreq.0.85) and additive Xe (0.005.ltoreq.e.ltoreq.0.07) and wherein the metal reflective layer is made of Ag or Ag alloy, wherein a third dielec. layer made of material excluding a sulfide compd. is disposed between the second dielec. layer and the metal reflective layer. The medium provides the as much storage capacity as the DVD-ROM and shows the good recording characteristics and the good storageability.

ST rewritable optical recording media

IT Erasable optical disks

Optical recording materials

(rewritable optical recording media and method for recording thereon)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dielec. layer of rewritable optical recording media)

IT \*\*\*406496-61-5\*\*\* \*\*\*449762-50-9\*\*\*  
RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layer of rewritable optical recording media)

IT 39325-34-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(reflective layer of rewritable optical recording media)

L7 ANSWER 42 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:606227 CAPLUS

DN 137:177178

ED Entered STN: 14 Aug 2002

TI Optical recording media and their manufacture

IN Miura, Hiroshi; Onagi, Nobuaki; Hanaoka, Katsushige

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-24; G11B007-26; G11B007-30

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002225436	A2	20020814	JP 2001-29811	20010206
PRAI	JP 2001-29811		20010206		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002225436	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26; G11B007-30
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]; G11B0007-30 [ICS,7]

AB In the recording media having recording layers of Sb- and Te-contg. phase-change-type recording materials having metastable Sb<sub>3</sub>Te phases

(space group Fm3m), crystn.-acceleration layers of high-m.p. Bi compds. are formed at least adjacent to a part of the recording layers. The recording media are manufd. by forming 1st dielec. layers, the crystn.-acceleration layers, and the recording layers on substrates successively. Recording media showing no change in disk characteristics caused by change in compn. of recording layers are obtained without initialization by heat treatment.

ST optical recording medium bismuth crystn acceleration layer; phase change optical recording crystn acceleration layer; antimony tellurium optical disk crystn acceleration layer

IT Erasable optical disks  
Optical recording materials  
(manuf. of phase change-type optical recording media having Bi compd. crystn.-acceleration layers)

IT 12010-75-2, Bismuth, compd. with zirconium (2:1) 12048-37-2, Bismuth, compd. with zirconium (1:1) 12048-61-2, Bismuth, compd. with zirconium (2:3) 12232-81-4, Bismuth, compd. with cerium (1:1) 12338-02-2, Bismuth, compd. with lithium (1:3) 59125-90-5, Bismuth, compd. with rhodium (1:1)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(manuf. of phase change-type optical recording media having Bi compd. crystn.-acceleration layers)

IT 446266-47-3 \*\*\*446266-48-4\*\*\* 446266-49-5 446266-50-8  
446266-51-9  
RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layers; manuf. of phase change-type optical recording media having Bi compd. crystn.-acceleration layers)

L7 ANSWER 43 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:553452 CAPLUS  
DN 137:116998  
ED Entered STN: 26 Jul 2002  
TI Phase-change optical recording media with excellent high-speed overwriting properties and durability  
IN Yuzuhara, Hajime; Deguchi, Hiroshi; Otani, Wataru; Harigai, Masato; Ito, Kazunori; Onagi, Nobuaki; Shibaguchi, Takashi; Tashiro, Hiroko  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS G11B007-24; B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002208182	A2	20020726	JP 2001-2731	20010110
PRAI	JP 2001-2731		20010110		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002208182	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]

AB The medium, useful for CD and DVD, consists of a transparent substrate, a dielec. protective layer (A), a recording layer (B), A (optional), a 2nd protective layer (C), and a heat-reflecting layer (D, contg. Ag, Au, or their alloys, preferably) in this order, wherein A comprise a ZnS-SiO2 mixt. and C comprises SiC contg. <15 mol% Al2O3 or AlN or <10 at.% Cr. The medium having D, C, A (optional), B, and A in this order on a transparent substrate is also claimed. The layer B may contain Sb and Te and have a NaCl-type crystal structure.

ST optical recording medium high speed overwriting; silicon carbide protective layer optical disk; rewritable DVD durability zinc sulfide silica

IT Optical recording materials  
(erasable; rewritable optical recording media with good durability having ZnS/SiO2 and SiC protective layers)

IT Rocksalt-type crystals

(recording layer; rewritable optical recording media with good durability having ZnS/SiO<sub>2</sub> and SiC protective layers)

IT Erasable optical disks  
(rewritable optical recording media with good durability having ZnS/SiO<sub>2</sub> and SiC protective layers)

IT 409-21-2, Silicon carbide, uses 1344-28-1, Aluminum oxide, uses 7440-47-3, Chromium, uses 24304-00-5, Aluminum nitride  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(2nd protective layer; rewritable optical recording media with good durability having ZnS/SiO<sub>2</sub> and SiC protective layers)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silicon dioxide, uses  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(dielec. protective layer; rewritable optical recording media with good durability having ZnS/SiO<sub>2</sub> and SiC protective layers)

IT 443284-25-1 \*\*\*443284-26-2\*\*\* \*\*\*443284-27-3\*\*\* 443284-28-4  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(recording layer; rewritable optical recording media with good durability having ZnS/SiO<sub>2</sub> and SiC protective layers)

IT 12735-99-8 58739-36-9 443284-29-5 443284-30-8  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(reflective layer; rewritable optical recording media with good durability having ZnS/SiO<sub>2</sub> and SiC protective layers)

L7 ANSWER 44 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:538188 CAPLUS  
DN 137:86015  
ED Entered STN: 19 Jul 2002  
TI Phase change optical recording medium  
IN Nakamura, Yuki; Kato, Masaki  
PA Ricoh Company, Japan  
SO Eur. Pat. Appl., 30 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1223577	A2	20020717	EP 2002-250177	20020110
	EP 1223577	A3	20030806		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002205459	A2	20020723	JP 2001-2258	20010110
	JP 2002208143	A2	20020726	JP 2001-5734	20010112
	TW 565835	B	20031211	TW 2002-91100082	20020104
	US 2003043712	A1	20030306	US 2002-44490	20020109
PRAI	JP 2001-2258	A	20010110		
	JP 2001-5734	A	20010112		
	JP 2001-57392	A	20010301		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1223577	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,6]
	ECLA	C23C014/06D; C23C014/34B2; G11B007/006S; G11B007/125C2; G11B007/243; G11B007/26V
JP 2002205459	IPCI	B41M0005-26 [ICM,7]; C22C0012-00 [ICS,7]; C22C0021-00 [ICS,7]; C23C0014-34 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
JP 2002208143	IPCI	G11B0007-0055 [ICM,7]; G11B0007-125 [ICS,7]; G11B0007-26 [ICS,7]
TW 565835	IPCI	G11B0007-24 [ICM,7]
US 2003043712	IPCI	G11B0007-125 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	C23C0014-06 [I,A]; C23C0014-06 [I,C]; C23C0014-34 [I,A]; C23C0014-34 [I,C]; G11B0007-00 [I,C];



G11B0007-0045 [N,A]; G11B0007-006 [I,A]; G11B0007-125  
[I,A]; G11B0007-125 [I,C]; G11B0007-24 [I,C];  
G11B0007-243 [I,A]; G11B0007-26 [I,A]; G11B0007-26  
[I,C]  
NCL 369/047.530  
ECLA C23C014/06D; C23C014/34B2; G11B007/006S; G11B007/125C2;  
G11B007/243; G11B007/26V

AB A phase change optical recording medium is disclosed together with the methods for optimally initializing and recording such recording media, feasible for carrying out read/write/erase operations at multiple recording velocities ranging of 4.8-30 m/s. Preferably, a recording layer included in the recording medium essentially consists of Ag, In, Sb and Te, with the proportion in atom % of 0.1 .ltoreq. Ag .ltoreq. 7, 2 .ltoreq. In .ltoreq. 10, 64 .ltoreq. Sb .ltoreq. 92, 5 .ltoreq. Te .ltoreq. 26, and with total .gtoreq. 97%. The method for initializing the recording medium with a scanning beam spot from a high power semiconductor laser is characterized by the energy d. input by the beam spot during one period of through scan is .ltoreq. 1000 J/m<sup>2</sup>, scanning speed of beam spot is in the range of 3.5-6.5 m/s, and the intensity of laser emission .gtoreq. 330 mW. Furthermore, the present method for detg. an optimum recording power includes at least the step of calcg. a normalized gradient g(P), from the equation  $g(P) = (m/.DELTA.m)/(P/.DELTA.P)$  (.DELTA.P is an infinitesimal change in the vicinity of recording power P, and .DELTA.m is an infinitesimal change in the vicinity of signal amplitude m).

ST phase change optical recording rewritable disk  
IT Optical recording materials  
(erasable; phase change optical recording medium)  
IT Optical recording materials  
Sputtering  
(phase change optical recording medium)  
IT Telluride glasses  
RL: DEV (Device component use); USES (Uses)  
(phase change optical recording medium contg.)  
IT 7440-36-0, Antimony, uses 7440-56-4, Germanium, uses 7440-74-6, Indium, uses 13494-80-9, Tellurium, uses  
RL: DEV (Device component use); USES (Uses)  
(Telluride glass; phase change optical recording medium contg.)  
IT 374728-59-3P \*\*\*374728-66-2P\*\*\* 441070-09-3P 441070-10-6P  
441070-11-7P 441070-12-8P 441070-13-9P 441070-14-0P  
\*\*\*441070-15-1P\*\*\* \*\*\*441070-16-2P\*\*\*  
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)  
(recording layer, Telluride glass; phase change optical recording medium contg.)  
IT 7440-22-4, Silver, properties 12635-49-3, Aluminum 99.5, Titanium 0.5 (atomic) 39404-72-3, Aluminum 98.5, Silicon 1.5 (atomic) 58338-95-7, Gold 2, Silver 98 (atomic) 99587-36-7 133580-32-2, Palladium 2, Silver 98 (atomic) 153600-12-5 169381-62-8 174284-40-3, Silver 98, titanium 2 (atomic) 196392-07-1 203397-04-0, Copper 2, Silver 98 (atomic) 423171-27-1 441070-17-3 441070-18-4  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(reflective layer; phase change optical recording medium contg.)  
IT 441069-99-4 441070-00-4 441070-01-5 441070-02-6 441070-03-7  
441070-04-8 441070-05-9 \*\*\*441070-06-0\*\*\* \*\*\*441070-07-1\*\*\*  
\*\*\*441070-08-2\*\*\*  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
(sputtering target, Telluride glass; phase change optical recording medium from)

L7 ANSWER 45 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:349323 CAPLUS

DN 136:377545

ED Entered STN: 10 May 2002

TI Phase-change optical recording medium and its initialization

IN Tashiro, Hiroko; Ito, Kazunori; Harigai, Masato; Onagi, Nobuaki; Yuzuhara, Hajime

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24  
ICS G11B007-24; B41M005-26; G11B007-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002133711	A2	20020510	JP 2000-329994	20001030
PRAI	JP 2000-329994		20001030		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002133711	ICM	G11B007-24
	ICS	G11B007-24; B41M005-26; G11B007-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-26 [ICS,7]

AB The recording medium has a phase-change recording layer with the max. crystal grain width after initialization 0.01-0.1 .mu.m. The medium shows improved overwriting characteristics with less increase of jitter.

ST phase change optical recording disk initialization crystal grain width

IT Optical disks

Optical recording

(initialization of phase-change optical recording medium with improved overwriting characteristics)

IT 423172-09-2 423172-10-5 423172-11-6 423172-12-7 423172-13-8

\*\*\*423172-14-9\*\*\*

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(initialization of phase-change optical recording medium with improved overwriting characteristics)

L7 ANSWER 46 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:255925 CAPLUS

DN 136:301841

ED Entered STN: 05 Apr 2002

TI Phase-change rewritable optical recording media and method for manufacture thereof

IN Shinkai, Masaru; Deguchi, Hiroshi; Onagi, Nobuaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS G11B007-24; G11B007-0045; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002100076	A2	20020405	JP 2000-290866	20000925
PRAI	JP 2000-290866		20000925		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002100076	ICM	G11B007-24
	ICS	G11B007-24; G11B007-0045; G11B007-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-26 [ICS,7]

AB The title recording media have a first dielec. layer, a recording layer, a second dielec. layer, and a reflective layer on a transparent substrate, wherein the second dielec. layer is made of materials suitable for recording at a desired linear velocity and functions as a layer for controlling the linear velocity of recording. Recording media provide the recording at the low linear velocity and shows the good durability. G 11 B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT BETWEEN RECORD CARRIER AND TRANSDUCER. 7/00 Recording or reproducing by optical means; Record carriers therefor [4]. 7/24 . Record carriers characterized by the selection of the material or by the structure or form [4].

ST phase rewritable optical recording media manuf

IT Optical disks

Optical recording materials

(phase-change rewritable optical recording media and method for manuf. thereof)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dielec. layers of optical recording media)  
IT 1314-13-2, Zinc oxide, uses 1344-28-1, Aluminum oxide, uses  
12033-62-4, Tantalum nitride 12033-89-5, Silicon nitride, uses  
24304-00-5, Aluminum nitride 59763-75-6, Tantalum oxide  
RL: DEV (Device component use); USES (Uses)  
(layer for controlling the linear velocity of recording of optical  
recording media)  
IT \*\*\*404003-64-1\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(recording layer of optical recording media)

L7 ANSWER 47 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:253096 CAPLUS  
DN 136:286666  
ED Entered STN: 05 Apr 2002  
TI Optical disk with phase change type SbTe recording layer  
IN Yamada, Katsuyuki; Narumi, Shinya; Harigaya, Makoto; Tani, Katsuhiko;  
Iwata, Noriyuki; Onagi, Nobuaki; Ito, Kazunori; Shibaguchi, Takashi;  
Hibino, Eiko; Yuzurihara, Hajime; Ohkura, Hiroko; Shimofuku, Akira;  
Nakamura, Yuki  
PA Ricoh Company, Japan  
SO Eur. Pat. Appl., 56 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM G11B007-00  
ICS G11B007-007; G11B007-24; G11B007-26; G11B020-08  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1193696	A2	20020403	EP 2001-123474	20010928
	EP 1193696	A3	20030716		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002225437	A2	20020814	JP 2001-38288	20010215
	US 2002110063	A1	20020815	US 2001-966171	20010928
	JP 2002358691	A2	20021213	JP 2001-304019	20010928
	EP 1467351	A1	20041013	EP 2004-14398	20010928
	R: DE, FR, GB				
	EP 1467352	A1	20041013	EP 2004-14399	20010928
	R: DE, FR, GB				
PRAI	JP 2000-297364	A	20000928		
	JP 2000-310536	A	20001011		
	JP 2000-367361	A	20001201		
	JP 2001-88516	A	20010326		
	EP 2001-123474	A3	20010928		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1193696	ICM	G11B007-00
	ICS	G11B007-007; G11B007-24; G11B007-26; G11B020-08
	IPCI	G11B0007-00 [ICM,6]; G11B0007-007 [ICS,6]; G11B0007-24 [ICS,6]; G11B0007-26 [ICS,6]; G11B0020-08 [ICS,6]
	ECLA	G11B007/0045P; G11B007/005R; G11B007/006; G11B007/007; G11B007/125C; G11B007/24; G11B007/243; G11B007/26; G11B019/12; G11B020/08; G11B020/10
JP 2002225437	IPCI	B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7]
US 2002110063	IPCI	G11B0007-00
	IPCR	G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-006 [N,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0019-12 [I,A]; G11B0019-12 [I,C]; G11B0020-08 [I,A]; G11B0020-08 [I,C]; G11B0020-10 [I,A]; G11B0020-10 [I,C]
	NCL	369/047.390
	ECLA	G11B007/0045P; G11B007/24; G11B007/243; G11B019/12;

JP 2002358691 IPCI G11B020/08; G11B020/10  
 EP 1467351 IPCI G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-004  
 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-26 [ICS,7]  
 ECLA G11B007/243; G11B020/08  
 EP 1467352 IPCI G11B0007-00 [ICM,7]; G11B0007-007 [ICS,7]; G11B0007-24  
 [ICS,7]; G11B0007-26 [ICS,7]; G11B0020-08 [ICS,7]  
 ECLA G11B007/243; G11B020/08  
 AB An optical information recording medium comprises a substrate having  
 concentric circular guide groove stores information that indicates a max.  
 recording linear velocity  $V_h$ . A phase change type SbTe recording layer is  
 formed on the substrate having such a compn. and thickness that a  
 dislocation linear velocity  $V$  satisfies the relation  $V \geq V_h \times 0.85$   
 in particular for a pulse modulation recording method.  
 ST optical disk phase change recording material antimony tellurium; telluride  
 glass  
 IT Sputtering  
 (fabrication process of optical disk including)  
 IT Optical disks  
 (optical disks contg. telluride glass as phase change recording layer)  
 IT Telluride glasses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (phase change recording layer in optical disk)  
 IT Coating process  
 (spin; fabrication process of optical disk including)  
 IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-21-3, Silicon,  
 uses 7440-31-5, Tin, uses 7440-69-9, Bismuth, uses 17778-88-0,  
 Nitrogen atom, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (additive element in telluride glass used as phase change recording  
 layer in optical disk)  
 IT 81207-86-5 \*\*\*384829-31-6\*\*\* 406496-52-4 406496-53-5 406496-54-6  
 406496-55-7 406496-56-8 406496-57-9 406496-58-0 406496-59-1  
 \*\*\*406496-60-4\*\*\* \*\*\*406496-61-5\*\*\* 406496-62-6 406496-63-7  
 406496-66-0 406496-68-2 406496-69-3 406496-70-6 406496-71-7  
 406496-72-8 406496-73-9 406496-74-0 406496-75-1 406496-76-2  
 406496-77-3 \*\*\*406496-78-4\*\*\* \*\*\*406496-79-5\*\*\*  
 \*\*\*406496-80-8\*\*\* 406496-81-9 406496-82-0 406496-83-1  
 406496-84-2 406496-85-3 406496-86-4 406496-87-5 406496-88-6  
 406496-89-7 406496-90-0 406496-91-1 406496-92-2 406496-93-3  
 406496-94-4 406496-95-5 406496-96-6 406496-97-7  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (phase change recording layer in optical disk)  
 IT 409-21-2, Silicon carbide, uses 1314-98-3, Zinc sulfide, uses  
 7631-86-9, Silicon dioxide, uses 113443-18-8, Silicon monoxide  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (protection layer in optical disk contg.)  
 IT 11106-92-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (reflection layer in optical disk contg.)  
 IT 7440-22-4, Silver, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium,  
 uses 7440-56-4, Germanium, uses 7440-74-6, Indium, uses 13494-80-9,  
 Tellurium, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (telluride glass; phase change recording layer in optical disk contg.)  
 L7 ANSWER 48 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:238014 CAPLUS  
 DN 136:286653  
 ED Entered STN: 28 Mar 2002  
 TI Phase-change optical information recording media with excellent  
 overwritability and their manufacture  
 IN Shinkai, Masaru; Konagi, Nobuaki  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002092950	A2	20020329	JP 2000-277172	20000912
PRAI	JP 2000-277172		20000912		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002092950	ICM	G11B007-24
	ICS	G11B007-24; G11B007-26
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]

AB The medium contains a transparent substrate, a 1st dielec. layer, a recording layer, a 2nd dielec. layer, and a reflection layer in this order, wherein at least one of the dielec. layers, facing the recording layer, comprises a dielec. material contg. a compd. free from Group IVA elements (except C) or a mixt. of the compd. and ZnS. The medium may be manufd. by sputtering the dielec. material as a target in the presence of a rare gas and optionally O gas.

ST optical information recording medium direct overwrite; rewritable optical disk metal oxide sputtering; titanium oxide dielec layer sputtering disk

IT Magnetron sputtering  
Sputtering  
(direct-current; manuf. of rewritable optical disks with good direct overwriting properties)

IT Erasable optical disks  
(manuf. of rewritable optical disks with good direct overwriting properties)

IT Polycarbonates, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(substrate; manuf. of rewritable optical disks with good direct overwriting properties)

IT 405890-55-3P, Titanium zinc oxide sulfide (Ti0.2Zn0.8O0.4S0.8)  
405890-57-5P, Niobium zinc oxide sulfide (Nb0.12Zn0.92O0.28S0.92)  
405890-58-6P, Chromium zinc oxide sulfide (Cr0.4Zn0.8O0.6S0.8)  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dielec. layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 1308-38-9, Chromium oxide, uses 12627-00-8, Niobium oxide  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dielec. layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 178255-68-0P, Silicon zinc oxide sulfide (Si0.1Zn0.4O0.2S0.4)  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(recording layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT \*\*\*404003-64-1\*\*\* 405890-59-7  
RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 7440-22-4, Silver, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(reflection layer; manuf. of rewritable optical disks with good direct overwriting properties)

IT 7440-37-1, Argon, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(sputtering gas; manuf. of rewritable optical disks with good direct overwriting properties)

L7 ANSWER 49 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:193173 CAPLUS

DN 136:254597

ED Entered STN: 17 Mar 2002

TI Phase-change optical recording media enabling improvement of sputtering rate in film formation

IN Onagi, Nobuaki; Harigai, Masato; Ito, Kazunori; Tashiro, Hiroko; Yuzuhara, Hajime; Shinkai, Masaru; Deguchi, Hiroshi; Shibaguchi, Takashi; Suzuki, Eiko

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G11B007-24  
 ICS G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002074747	A2	20020315	JP 2000-265834	20000901
PRAI	JP 2000-265834		20000901		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002074747	ICM	G11B007-24
	ICS	G11B007-24
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]

AB The media possess, between transparent substrates and phase-change recording layers, transparent dielec. protective layers composed of (i) lower layers having film-forming rate higher than that of ZnS-SiO2 and (ii) upper layers having thermal cond. equal to or lower than that of ZnS-SiO2. Also claimed are the media bearing reflective heat radiation layers (A) adjacent to bilayer protective layers whose layers on the A side have thermal cond. higher than that of ZnS-SiO2 and A show thermal cond. higher than that of Al. The heat radiation layers may contain .gtoreq.50 at.% Ag. The media can be manufd. by high-speed sputtering while minimizing dust formation.

ST phase change optical disk sputtering rate fast; dielec protective layer rewritable CD ROM; nitrided germanium alloy optical disk protective layer

IT Erasable optical disks  
 (CD-ROM; phase-change optical recording media bearing bilayered dielec. protective layers)

IT Optical recording materials  
 (erasable; phase-change optical recording media bearing bilayered dielec. protective layers)

IT 7631-86-9, Silica, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (protective layer components; phase-change optical recording media bearing bilayered dielec. protective layers)

IT 409-21-2, Silicon carbide, uses 1309-48-4, Magnesia, uses 1314-13-2, Zinc oxide, uses 1314-36-9, Yttria, uses 1314-98-3, Zinc sulfide, uses 1315-09-9, Zinc selenide 1344-28-1, Alumina, uses 7440-57-5, Gold, uses 10043-11-5, Boron nitride, uses 11109-29-8 12033-62-4, Tantalum nitride 12069-32-8, Boron carbide (B4C) 24304-00-5, Aluminum nitride 157392-07-9, Silicon sulfur zinc oxide 212575-08-1D, nitrided 404003-60-7D, nitrided 404003-62-9D, nitrided 404003-63-0D, nitrided 404003-66-3D, nitrided 404003-67-4D, nitrided  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (protective layers; phase-change optical recording media bearing bilayered dielec. protective layers)

IT 404003-61-8 \*\*\*404003-64-1\*\*\* \*\*\*404003-65-2\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (recording layers; phase-change optical recording media bearing bilayered dielec. protective layers)

IT 37282-82-9 65264-68-8, Indium 3, silver 97 (atomic)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (reflective heat radiation layers; phase-change optical recording media bearing bilayered dielec. protective layers)

L7 ANSWER 50 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:19498 CAPLUS  
 DN 136:77302  
 ED Entered STN: 08 Jan 2002  
 TI Phase-change optical information recording media having antimony-tellurium alloy layers and their manufacture by vapor deposition and simultaneous crystallization  
 IN Miura, Hiroshi; Hanaoka, Katsushige; Onagi, Nobuaki; Harigaya, Masato; Deguchi, Hiroshi; Furukawa, Ryuichi; Otani, Wataru; Shibata, Kiyoto; Aman, Yasutomo  
 PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS G11B007-24; G11B007-26  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 75

FAN.CNT 1					
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002002116	A2	20020108	JP 2000-285730	20000920
PRAI	JP 1999-266970	A	19990921		
	JP 2000-117774	A	20000419		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002002116	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]

AB The medium, useful for a rewritable optical disk, has a recording layer (A) which contains Sb, Te, and preferably Ge and has a metastable Sb3Te crystal phase (space group Fm3m) and a crystn.-accelerating layer (B) which contains Bi, Al, In, or Tl and contacts at least a part of the recording layer. B will melt by energy beam irradiation, disperse into A, and form amorphous recording marks with crystn. temp. .gtoreq.160.degree.. Enhanced reliability under high temp. and high humidity environments has been achieved.

ST optical information recording medium storage stability; antimony telluride metastable phase optical disk; bismuth crystn accelerating layer optical disk; rewritable optical disk initialization free

IT Crystal structure  
 Crystallization  
 Erasable optical disks  
 Metastable state (thermodynamic)  
 Optical recording materials  
 (phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 1304-82-1, Bismuth telluride (Bi2Te3) 1312-41-0, Indium antimonide (InSb) 7429-90-5, Aluminum, processes 7440-28-0, Thallium, processes 7440-69-9, Bismuth, processes 12010-46-7, Bismuth, compd. with indium (1:1) 12323-19-2, Bismuth antimonide (BiSb)  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (crystn.-accelerating layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 7440-56-4, Germanium, processes 7440-57-5, Gold, processes  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (dopant, recording layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 7440-22-4, Silver, processes  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (dopant, recording layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb3Te phase-contg. recording layers)

IT 384829-16-7 384829-18-9 384829-19-0 \*\*\*384829-20-3\*\*\*  
 \*\*\*384829-22-5\*\*\* 384829-23-6 384829-24-7 384829-25-8  
 384829-26-9 384829-27-0 384829-28-1 \*\*\*384829-29-2\*\*\*  
 384829-30-5 \*\*\*384829-31-6\*\*\* 384829-32-7 384829-33-8  
 384829-35-0 \*\*\*384829-36-1\*\*\* 384829-37-2 384829-38-3  
 384829-39-4 384829-40-7 384829-41-8 384829-43-0 384829-44-1  
 384829-45-2, Antimony telluride (Sb3Te) 384829-46-3 384829-47-4  
 384829-48-5 384829-49-6

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (recording layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb<sub>3</sub>Te phase-contg. recording layers)  
 IT 7440-74-6, Indium, processes  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (recording or crystn.-accelerating layer; phase-change optical disks with crystn.-accelerating layers on metastable Sb<sub>3</sub>Te phase-contg. recording layers)

L7 ANSWER 51 OF 51 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:868000 CAPLUS  
 DN 136:12935  
 ED Entered STN: 30 Nov 2001  
 TI Optical recording medium and sputtering target for fabricating the recording medium  
 IN Nakamura, Yuki; Kato, Masaki  
 PA Ricoh Company, Japan  
 SO Eur. Pat. Appl., 16 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM G11B007-24  
 ICS C23C014-06  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 56  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1158506	A1	20011128	EP 2001-112746	20010525
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6592958	B2	20030715	US 2001-863472	20010524
	JP 2002046356	A2	20020212	JP 2001-156927	20010525
	TW 514907	B	20021221	TW 2001-90112689	20010525
PRAI	JP 2000-155389	A	20000525		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1158506	ICM	G11B007-24
	ICS	C23C014-06
	IPCI	G11B0007-24 [ICM,6]; C23C0014-06 [ICS,6]
	ECLA	C23C014/34B2; G11B007/243
US 6592958	IPCI	B32B0003-02 [ICM,7]
	IPCR	C23C0014-34 [I,A]; C23C0014-34 [I,C]; G11B0007-24 [I,C]; G11B0007-243 [I,A]
	NCL	428/064.100; 419/035.000; 428/064.500; 428/064.600; 430/270.130
	ECLA	C23C014/34B2; G11B007/243
JP 2002046356	IPCI	B41M0005-26 [ICM,7]; C23C0014-34 [ICS,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
TW 514907	IPCI	G11B0007-24 [ICM,7]; C23C0014-06 [ICS,7]

AB An optical recording medium is provided with a recording layer made of a phase-change recording material including Ag, In, Sb, and Te as the main constituent elements, with the resp. at. percents of a, b, c, and d thereof being in the relationship of 0.1 .ltoreq. a .ltoreq. 5, 5 .ltoreq. b .ltoreq. 13, 62 .ltoreq. c .ltoreq. 73, 22 .ltoreq. d .ltoreq. 26, and a+b+c+d .gtoreq. 97. Alternatively, the recording material includes the constituent elements of Ag, In, Sb, Te, and Ge, with the resp. at. percents of a, b, c, d, and e thereof being in the relationship of 0.1 .ltoreq. a .ltoreq. 5, 5 .ltoreq. b .ltoreq. 13, 62 .ltoreq. c .ltoreq. 73, 22 .ltoreq. d .ltoreq. 26, 0.3 .ltoreq. e .ltoreq. 3, and a+c+d+e .gtoreq. 97. A sputtering target for forming the recording layer is also disclosed.  
 ST phase change rewritable optical disk sputtering target; antimony gallium indium silver tellurium alloy  
 IT Telluride glasses  
 RL: DEV (Device component use); USES (Uses)



(antimony gallium indium silver telluride glass or antimony indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT Sputtering targets  
(compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT Erasable optical disks  
(optical recording medium and sputtering target for fabricating)

IT 7440-22-4, Silver, uses 7440-36-0, Antimony, uses 7440-55-3, Gallium, uses 7440-74-6, Indium, uses 13494-80-9, Tellurium, uses  
RL: DEV (Device component use); USES (Uses)  
(antimony gallium indium silver telluride glass or antimony indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT 374728-65-1 \*\*\*374728-66-2\*\*\* \*\*\*374728-67-3\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(antimony gallium indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT 374728-59-3 374728-60-6 374728-61-7 374728-62-8 374728-63-9  
374728-64-0 374728-68-4 374728-69-5 374728-70-8 374728-77-5  
RL: DEV (Device component use); USES (Uses)  
(antimony indium silver telluride glass; compn. of recording layer and sputtering target for fabricating rewritable optical disks)

IT 12780-80-2 12798-66-2 37263-88-0 51427-72-6 60291-59-0  
60381-81-9 61691-68-7 74487-01-7 100788-99-6 116946-13-5  
128160-58-7 133580-32-2 173384-70-8 180295-91-4 317855-01-9  
374728-71-9 374728-72-0  
RL: DEV (Device component use); USES (Uses)  
(metal layer compn. for fabricating rewritable optical disks)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Ricoh Kk; EP 0717404 A 1996 CAPLUS  
(2) Ricoh Kk; EP 0735158 A 1996  
(3) Ricoh Kk; EP 0898272 A 1999 CAPLUS  
(4) Sony Corp; EP 0962924 A 1999 CAPLUS  
(5) Tdk Corp; EP 1030292 A 2000 CAPLUS

=> d his

(FILE 'HOME' ENTERED AT 17:06:35 ON 09 FEB 2006)

FILE 'REGISTRY' ENTERED AT 17:06:43 ON 09 FEB 2006

L1 12609 S AG 0.1-7/MAC  
L2 6746 S IN 2-10/MAC  
L3 2463 S SB 64-92/MAC  
L4 1917 S TE 5-26/MAC  
L5 3824 S GE 0.3-3/MAC  
L6 70 S L1 AND L2 AND L3 AND L4 AND L5

FILE 'CAPLUS' ENTERED AT 17:08:15 ON 09 FEB 2006

L7 51 S L6

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	157.03	182.36
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-38.25	-38.25

STN INTERNATIONAL LOGOFF AT 17:09:00 ON 09 FEB 2006